Money, Culture, and Well-Being in Rome's Economic Development, 0–275 CE

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Money, Culture, and Well-Being in Rome's Economic Development, 0–275 CE

By

Daniel Hoyer

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Cover illustration: reverse of gold coin (aureus) minted between 140–143 CE under authority of Emperor Antoninus Pius, showing Antoninus Pius (seated) and Liberalitas, personified goddess of generosity and benefaction, handing out coins to a Roman citizen. Inscription: LIBERALITAS / AUG II.
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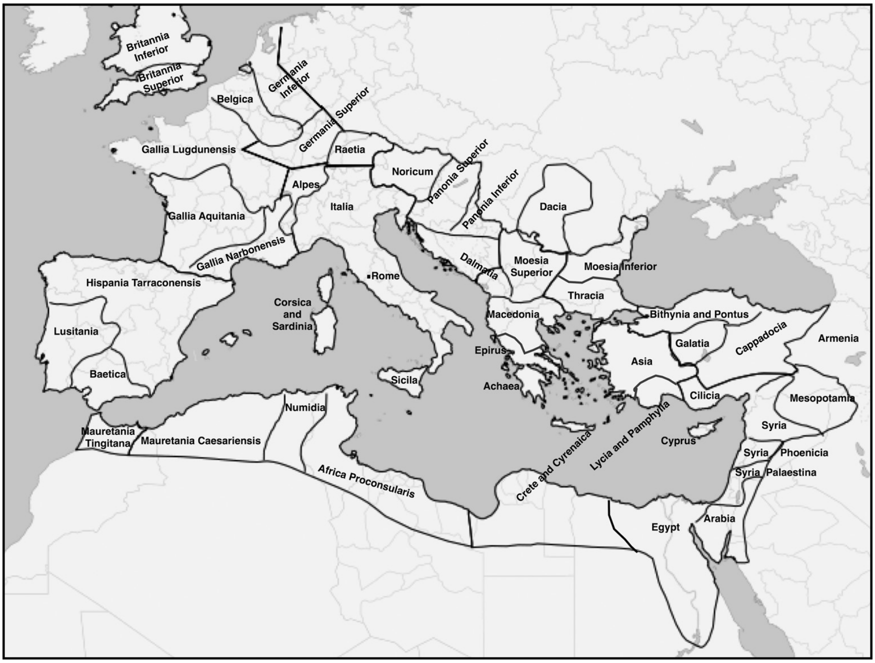
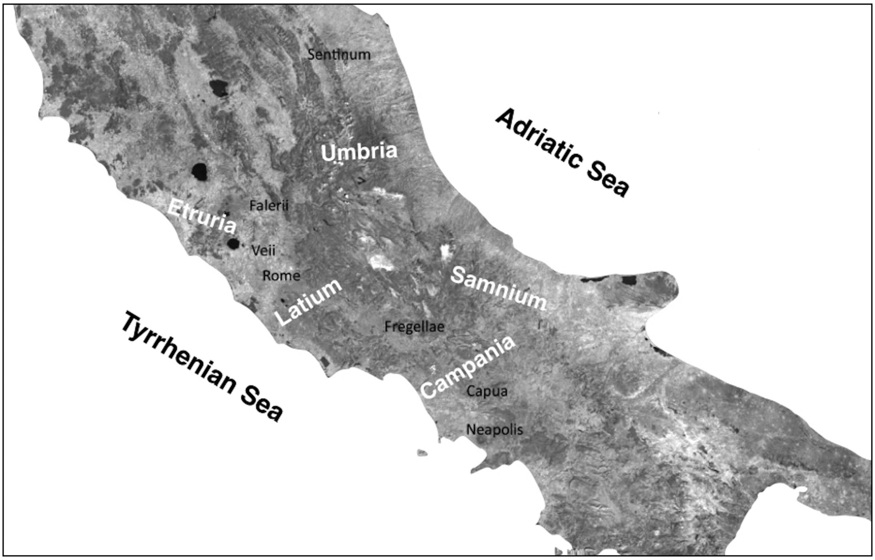
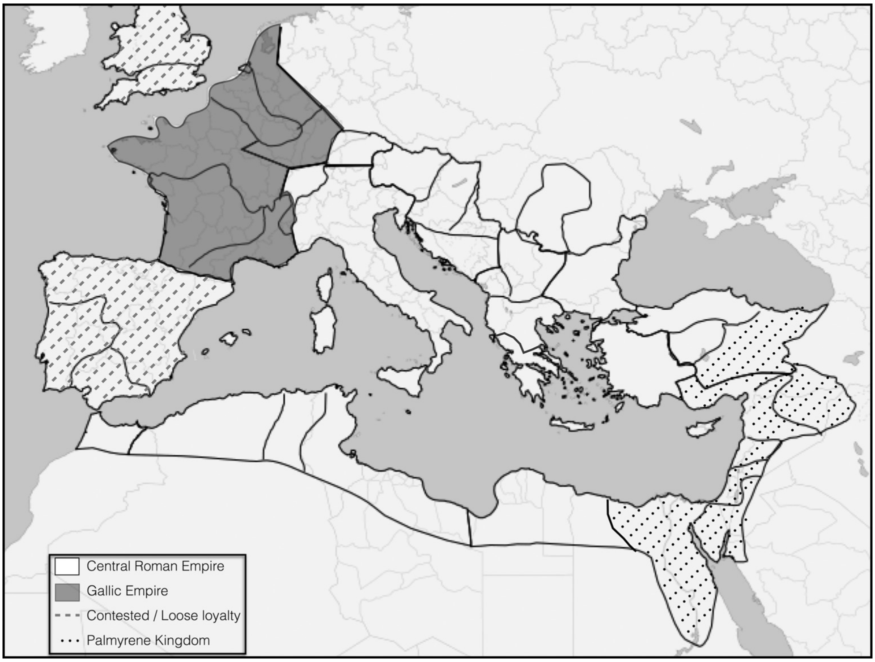


MAP 1 *Roman provinces*



MAP 2 *Central Italy in the early republican period*
AFTER BOATWRIGHT ET AL. 2012



MAP 3 *Roman world during 'third century crises'*

List of Roman Emperors*

Central Roman Emperors

Name of emperor	Dynasty	Dates reigned
Augustus	Julio-Claudian	27 BCE–14 CE
Tiberius	Julio-Claudian	14–37
Gaius (Caligula)	Julio-Claudian	37–41
Claudius	Julio-Claudian	41–54
Nero	Julio-Claudian	54–68
Galba		68–69
Otho		69
Vitellius		69
Vespasian	Flavian	69–79
Titus	Flavian	79–81
Domitian	Flavian	81–96
Nerva		96–98
Trajan		98–117
Hadrian		117–138
Antoninus Pius	Antonine	138–161
Marcus Aurelius	Antonine	161–180
Lucius Verus	Antonine	161–169
Commodus	Antonine	172–192
Pertinax		193
Didius Julianus		193
Septimius Severus	Severan	193–211
Caracalla	Severan	198–217
Macrinus	Severan	217–218
Elagabalus	Severan	218–222
Severus Alexander	Severan	222–235
Maximinus Thrax		235–238
Gordian I		238
Gordian II		238
Balabinus		238

* Includes short-lived usurpers and co-emperors.

Name of emperor	Dynasty	Dates reigned
Pupiennus		238
Gordian III		238–244
Philip Arabus		244–249
Decius		249–251
Trebonius Gallus		251–253
Valerian		253–260
Gallienus		254–268
Claudius Gothicus		268–270
Aurelian		270–275

Gallic Emperors

Name of emperor	Dates reigned
Postumus	260–269
Laelianus	269
Marius	269
Victorinus	269–270
Domitianus (?)	271
Tetricus I	270–274
Faustinus	273–274

CHAPTER 1

Introduction: Approaching the Imperial Roman Economy

The Roman Empire has long held pride of place in the collective memory of scholars, politicians, and the general public in the western world. At its height in the early second century CE, Rome controlled nearly all of western and northern Europe, the entire Mediterranean basin including all of North Africa and Egypt, and good portions of the Near East. But Rome's hold on the western imagination goes far deeper than the extent of her Empire. So many of the political, institutional, philosophical, and artistic features of modern western society are seen to be the direct inheritors of the Roman tradition, by way of Renaissance and Enlightenment interpretation of classical history. Moreover, Rome is often hailed as *the* most successful state of the entire pre-industrial world and, thus, the most worthy of emulation.

Of all Rome's achievements that have inspired awe over the years, perhaps the most poorly understood remains Rome's famed economic success. For not only was imperial Rome a large and powerful state, but it featured possibly the most extensive, highly developed, and productive economies of any state before the industrial revolution. Rome was able to support an enormous population—well over 50 million people at times—and saw advances in the production and distribution of all sorts of consumer goods, from luxuries like marble statues, foreign spices, and remarkable glassware to basic staples like wheat, wine, and olive oil. Without a doubt, more things were produced, more goods were transported to more places, and more people contributed to and benefited from this activity than at any point before or after Rome's imperial heyday. It is becoming increasingly clear too, though this is still controversial, that relatively sophisticated financial instruments, monetary systems, and highly-developed markets stood as the foundation for this overall economic expansion. Many pages have been devoted by specialists of Roman economic history trying to describe and detail the features that typify the imperial economy, seeking to explain the Empire's great economic boom. Scholars have championed urbanization, political unification leading to market development, changes in demographic structure, institutional forms, and a host of other factors in the quest to find a coherent and plausible explanation for Rome's ostensibly unique place in pre-industrial history.

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This book offers a new take on these issues. In the following pages, I assemble and discuss various types of evidence about the Roman economy. I try to bring a new approach to this material, seeing how all of this information can be put together into a single, coherent picture of the imperial economy, and test various models that could explain Rome's remarkable development in order to see which one is best supported by the evidence. I also highlight issues and topics that are relevant to economic history generally, putting the Roman Empire in its rightful place amid other pre-industrial states. Was the Roman Empire really so different from, say, Han China or Mughal India? If so, in what ways? This book will hopefully provide the foundation for such questions to be answered in future studies. More than that, it will hopefully provide some interesting ways of thinking about how and why Rome developed into one of the largest, wealthiest, and most stable Empires the world has ever known.

1 Central Aims of the Book

Guided by previous scholarship on the Roman imperial economy as well as ideas, theories, and perspectives from scholars in other fields, this book explores several of the key aspects of the Roman Empire's economic structure. My primary aim is to provide a new synthesis of the material evidence concerning Rome's economic functioning and to try to reconcile some of the competing accounts of this material that have been offered in recent years by Roman historians. I seek to bring some of the insights from outside of the field to bear on these issues, focusing on the crucial elements of economic activity that form the cornerstone of any work in economic history: market activity, the financial system, labor and infrastructure, and the role of the state, as well as the nature of productivity and overall societal well-being. I also scrutinize closely the impact that certain socio-cultural norms had on economic activity, such as predilections for prosocial activity or benefaction. All of these separate issues have been discussed by Roman historians in previous studies, with many useful and important insights offered. My contribution to this vibrant field of study is connecting the various facets together into a single, coherent account, a sort of coarse model. Furthermore, making explicit links to modern theory as well as similar scholarship being done on other historical societies helps to frame the arguments offered here about Rome into a wider, global, and cross-disciplinary context. The Roman economy deserves to be studied and understood not just by specialists on the ancient world, but should become a standard reference for economic historians in general.

The key organizing principle to this book is trying to contrast and reconcile different possible conceptions or interpretations about the Roman economy that have been offered by scholars in the past. Roman scholarship abounds with various ideas about agricultural productivity, urbanization, monetization and financial sophistication, as well as debates over economic growth, political culture, elite involvement in the economy, and the overall well-being of the average Roman living in the western Empire. Roman historians have produced countless volumes outlining their ideas on one of these issues or another and bringing to light an enormous body of material to support their claims. Sometimes these ideas overlap, sometimes different scholars contradict each other and its difficult to determine where consensus can be reached, if at all. Previous studies of the Roman economy have uncovered and discussed in great detail a wide variety of relevant evidence, whether its the writings of Roman authors and legal authorities, inscriptions etched into public monuments, or archaeological material ranging from scattered field survey to mountains of ceramic remains to coins buried away for thousands of years. As will become apparent reading this book, my arguments rely to a great extent on this previous work. In the following pages, I try to bring together as much of this material as I can, summarizing it, digesting it, and trying to fit it together into a single framework. This work is very much exploratory and, at times, my arguments are speculative; my goal is not to provide a detailed exposition of any single type of evidence, but rather to draw connections between the different strands, trace out the wider implications of each type, and see how these different pieces can all fit together. It is in bringing together these different strands of evidence and various types of arguments and theories concerning Rome's economic development that I hope this book will provide a novel, compelling, and, above all, engaging contribution to the field.

One important note that needs to be explained right away: I concentrate here on only the western half of the Empire, looking at mainly the 'high imperial period' during the first two and a half centuries CE, though I delve into later developments as well. The reason for this is practical—the western Empire alone offers more than enough material to fill the pages of this book and it would take the discussions too far afield to explore differences with the eastern half in sufficient detail. Further, a critical part of my argument here is extending the treatment of Rome's economic performance into the third century, a time of political dislocation which saw the differences between different regions of the Empire exaggerated. It is simply not possible to treat the eastern half with the same detail or consideration that I give to the western half, although the topic is certainly an important one and has been the subject

of several notable recent works.[1] The issue of bringing together analyses of the two halves and attempting to see how developments in East and West did, or did not, take the same path deserves its own treatment. But this is a task for future work. I will often refer to my subject as 'Rome' or 'the Empire', but this is merely a convenience; I ask the reader to please understand that unless otherwise noted, my arguments are restricted to the western half.

2 Who Will Read This? Target Audiences

This book is, first of all, a work of Roman history. As such, I hope that scholars interested in the Roman Empire, its economic function, the tie between political, cultural, and economic activity, and the implications for societal development will find something interesting and novel in my take on these issues. Students both of the classical Mediterranean along with other ancient societies may find useful material in these pages as well. However, I wrote the book specifically with non-Classicists in mind. My own research has increasingly benefited from an awareness of and interaction with scholarship on other historical societies, both ancient and modern and not just from the Mediterranean, but from across the globe. Engaging with methods and theories from the social sciences has clarified my understanding of many of the issues with which this work is concerned. I would like this book, then, to contribute to ongoing collaboration between classical historians, historians from other fields, and other scholars.

So many of us are now interested in the same ideas, the same processes of economic growth and social development, understanding how and under what circumstances people see real improvements to their quality of life. I believe that the case of imperial Rome offers invaluable insight into all of these matters. In some ways, Rome's experience was very similar to other pre-industrial states in a manner that suggests some generalized causal factors at play, but in other respects it was a unique case that should be used to nuance some of the general explanations that have been proposed in the past. Exploring how all of these factors played out in the western Roman Empire, I have tried to phrase my discussions in terms that will be accessible to scholars of all fields. I hope that the proceeding pages will be of use to a host of future cross-cultural comparative work and help to clarify the Roman Empire's place in the global history of economic growth and development.

1 Notably Blouin 2013; Hoffmann-Salz 2015; Monson 2012; D.W. Rathbone 2007; D.W. Rathbone and Von Reden 2014; von Reden 2010a; Zuiderhoek 2009.

3 Lingering Questions about Imperial Rome

Many economic historians working on more modern societies also have been fascinated by Rome. They take the Empire as a model for what was possible during pre-industrial times, equating its economic output with the most successful states of early modern Europe, England and Holland.[2] Some go so far as to suggest that the Roman imperial period was perhaps the only moment in human history before early modern times that a society significantly improved the material well-being of its inhabitants through real, intensive economic growth.[3] This has given the study of the Roman economy added importance and partly explains the prestige it currently enjoys. Not everyone, though, agrees with this rosy assessment of Roman life. Many scholars deny that the Empire was really so productive, so advanced, so similar to northern Europe on the eve of Industrialization that it should be lauded for its economic precociousness, a sort of pre-pre-industrial state. They argue that Rome experienced some limited expansion of output and perhaps trade, but very quickly population growth ate up these economic gains, leaving people no better off than they had been previously. Still other economic historians engaged in cross-cultural comparative research note that similarly large and economically productive ancient states such as the Neo-Babylonian Empire and Han China were about on par with Rome in terms of economic development, all topping out somewhere below the levels reached by northern Europe in the early modern period.[4]

Despite all the great work that has been done in the area, the precise nature and causes of Rome's economic efflorescence remain fairly opaque. Roman historians still disagree about what the best indicators of Rome's economic activity are and what exactly they indicate: certainly some expansion, but what precisely expanded? How? Did it expand everywhere and for everyone, or was it constrained to certain areas/times/people/products? The list of questions could, of course, continue. Disagreements also abound concerning the most significant causes or features underlying these productivity increases, be it trade, marketization, monetary development, favorable legal regulations, demographic changes, etc. This has led to a tremendous amount of useful information and analysis of copious amounts of material evidence, but also has engendered countless combinations of factors and, thus, dispute among scholars.

2 Malanima 2009; Milanovic, Lindert, and Williamson 2010.

3 Kron 2005; Lo Cascio and Malanima 2009; Temin 2013; Erdkamp 2015b.

4 Foldvari and Van Leeuwen 2012; van Leeuwen, Foldvari, and van Zanden 2014.

These lingering debates about the true nature and origin of Rome's imperial expansion, moreover, have made it difficult to properly place the early Empire in a global history of growth and development. The features highlighted by Roman historians—the impact of increasing urbanization, changes in the share of different sectors of the economy, the effect of institutional structures on economic activity, etc.—mirror, and indeed are for the most part inspired by, ideas coming out of economic theory and political science. In spite of the clear influence of general economic theory in studies of ancient economies, though, there is still much work to be done bringing together the different disciplines concerned with the roots and causes of economic development in the pre-industrial world. One of the chief reasons this has proven so difficult is that specialists of ancient history, theorists, and economic historians working on more recent historical societies rarely speak to each other directly. Many Roman historians engaged in economic issues have taken some of the theories and concerns of economics, but kept traditional historical research methods. Conversely, economic historians and social scientists who use Rome as a case study bring the theories and methods from their disciplines, but often without a very deep appreciation of Roman history or humanities research.

The result is that a great deal of interesting, revealing work has been done on both sides, but scholars from the different traditions largely talk past each other when making their claims. Studies examining in fine detail, for instance, scattered references to prices for grain throughout the Roman world as evidence for market integration (or lack thereof) are often inaccessible to economists and social scientists not able to read Latin and unfamiliar with the methods and nuances of Classical historical argument. Similarly, broad overviews of the wages paid to unskilled laborers for different societies scattered across the globe and over many hundreds of years—in the Near East, Asia, India, etc., in addition to the more 'familiar' Mediterranean states—can easily be read by an ancient historian as overly reductive, too far removed from the particulars of any given society to have much meaning to their study of a more narrowly-defined region, such as early imperial Rome.[5] To move forward and carve out a real place for the Roman Empire in broader studies of economic history and development, more work is needed that seeks to bridge these methodological and disciplinary divides. I believe that more explicit involvement with ideas

5 The recent volume on marketization throughout history by van der Spek, van Zanden, and van Leeuwen 2014 offers very interesting chapters taking both approaches. Contrast, for instance, Rathbone and von Redden's Chapter on ancient Mediterranean markets with van Leeuwen, Foldvari, and van Zanden's offering on long-term market dynamics from the Bronze Age through the Early Modern period.

and techniques across the disciplinary boundaries can only be to the benefit of everyone involved in trying to unlock the mysteries of growth and development.

The importance of increased engagement between Roman specialists and economic historians taking a more social-scientific approach is twofold.[6] First, engaging directly and deeply with the theories, methods, and ideas of economic theory, political science, and other work in the social sciences can help ancient historians appreciate the broader issues at stake when trying to uncover a past society's economic activity. Second, and just as important, the experience of the Roman Empire has a great deal to offer social scientists seeking to uncover such general trends and the causal factors that have led—and, thus, have the potential to continue to lead in the future—to economic growth and overall societal development. Add to this the fact that many of the key foundations supporting the development and economic success of contemporary states were forged in the distant past and it becomes quite clear that more direct cross-fertilization between the different approaches to economic history are much needed. Exploring how the evolution of various factors in the very long-term has shaped much of the economic activity and economically-influential cultural traits of modern states is a key theme for current and future research, one which is increasingly being taken up by economic historians and social scientists, with very promising prospects. Hopefully, this book will aid in this project in its own small way, offering insights into one case of a large, pre-industrial state that achieved relatively high economic and developmental success that can be fruitfully integrated into the study of generalized, global patterns.

4 The Many Faces of Roman Economic History

The study of economic matters seemingly dominates Classical history these days. Roman economic history in particular has become a virtual cottage industry of its own in the past few decades among scholars of antiquity. The result has been a tremendous improvement in our overall knowledge about the Roman economy, its main features, and the evidence that best reveals its extent and function. This great advance in our understanding, however, has not quelled debates among specialists. In fact, disputes seem to have only expanded as the study of the Roman economy has increased in popularity.

6 Joseph Manning and I recently provided an assessment of such cross-cultural, cross-disciplinary work Hoyer and Manning (forthcoming).

By all accounts, we have now, thankfully, moved past *the* great debate of ancient economic history that waged for most of the latter half of the twentieth century: the well-known and much discussed primitivist/modernist debate. For nearly 50 years, this controversy pitted ancient historians against one another, with proponents on one side viewing all ancient economies as inherently stagnant, agrarian, and fundamentally different from modern states, against those who saw ancient and modern activity as qualitatively the same, differing only in scale. Readers will be pleased to see that I will not rehash this old contest here,[7] but let it suffice to say that the extreme positions of both sides have now been largely rejected in favor of a more complex and nuanced picture of ancient life. In its place, however, numerous new disputes have arisen over not only the larger issues, such as economic growth and well-being development, but also over what types of evidence are appropriate to look at and what each type has to say.

To many scholars, this has meant exploring the material remains from the ancient world as closely as possible in order to answer very specific questions about the function and scale of different aspects of Rome's economy. This includes luminaries in the field like Richard Duncan-Jones,[8] who has written some of the most compelling and comprehensive accounts of the size, shape, and nature of different segments of the Roman economy, from endowments, to state activity, to the money economy. This includes also Keith Hopkins, who is famous for his 'taxes and trade' theory, which sought to explain the symbiosis of the imperial economy. Hopkins' argument in essence was that taxes collected largely in the provinces would end up in the hands of elites in Rome and soldiers in the frontiers. This money would then end up being spent on goods produced in the tax-paying provinces through domestic trade, allowing people in the provinces to 'buy back' their tax money through internal trade, a requirement since they needed to replenish their reserves of cash in order to pay their next round of taxes.[9] Currently, this charge towards quantification is being led by those involved with the *Oxford Roman Economy Project*, though is not limited to that project. This work generally involves archaeologists exploring a few types of material evidence, including ceramics; the remains of urban production centers; the result of archaeological excavation of specific build-

7 See Ian Morris' introduction to his edition of Finley's *The Ancient Economy* for a very useful summary of the debate Finley 1999. Scheidel and Von Reden 2002 also provides a great picture of how the field has really moved past the debate towards more focused studies of particular facets of ancient economic life.

8 E.g. Duncan-Jones 1962, 1982, 1990, 1994.

9 Hopkins 1980, 2002.

ings and field surveys of large settlement areas; along with other material. The goal is to quantify this evidence, building up inductive accounts of Rome's economic output through cataloguing and counting the material. This has produced many works extolling the impressive size of Rome's productive economy during the imperial period, the extent of exchange of various goods, the expansion of urban settlements and changing patterns of land use in the hinterland, and a score of other features.[10] Again, all of this has been incredibly beneficial to the study of Roman history. Unfortunately, there has been very little synthetic work bringing together all of this enormous amount of evidence into a single, coherent framework for explaining the Roman case.[11] Further, these projects tend to be under-theorized, with the quest for cataloguing and quantifying particular types of evidence taking primacy, and explanations for the discerned patterns coming mainly *post hoc*. This has led to contrasting explanations using different bodies of material to support the claims and, hence, promoted much disagreement over what precisely we are to make of the uncovered material.

Another major strand in recent Roman economy studies takes nearly the opposite approach. Many scholars influenced by the ideas of New Institutional Economics have sought to expose the underlying foundation of Rome's economic expansion by illuminating the Empire's institutional makeup.[12] Unlike those who focus primarily on material evidence, scholars with this approach tend to take the theory first, then adduce examples from the evidence to illustrate the concepts being proposed. The understanding is that particular legal, governmental, and administrative rules incentivized Romans towards particular types of activity, which ended up proving economically beneficial. For the early imperial period, this has been shown to consist mainly of rules favoring the aggregation of land and investment in productive enterprises by Rome's wealthy, elite citizens; a situation that led to massive increases in productivity and urban expansion, but also sharp disparities in wealth and income between different segments of the population. Exactly how great these disparities were, though, is one of the chief areas of dispute in these works. Others focus on non-governmental institutions and organizations that similarly structured economic behavior in significant ways, notably the various organizations

10 A. Wilson 2009a; A.K. Bowman and Wilson 2011; Marzano 2013; Blouin 2014; A.K. Bowman and Wilson 2013; Kay 2014; Hobson 2015a.

11 Kay 2014 is a notable exception, although he is concerned with the causes of Rome's expansion phase in the later Republican period, not the early Empire.

12 J.G. Manning 2003; Lo Cascio 2006; Von Reden 2006; Kehoe 2007; Frier and Kehoe 2007; Monson 2012.

of tradesmen, sometimes (misleadingly) referred to as unions or guilds (*collegia* in Latin) that existed throughout the Empire.[13] Certainly, work on Roman institutions and organizations has done much to advance our knowledge about various legal measures, political and administrative procedures, and different municipal regulations in the various provincial areas that affected in one or another economic activity. Such work often proceeds, however, from the presumption of a clear and meaningful separation between state-led activity and incentives on the one hand, such as the use of 'public' money for supporting the military as well as various infrastructural projects and, on the other, the ambitions and interests of 'private' elite citizens in buying land, investing in productive industries, and transporting and consuming goods in large quantities. The situation in the Roman world, as we shall see, was much more complicated than such a clear distinction implies.[14]

Some excellent work has also been done in recent years on the interaction between state agents, wealthy private citizens, and the poorer segments of Roman society, focusing on patron-client relationships or on the impact of regulations such as the granting of citizenship to various groups or those concerning slavery (along with the Roman practice of manumission).[15] This work seeks to address this problematic public/private dichotomy, although we do still require further understanding of how all of these different facets were enmeshed within the Roman economic system. Indeed, one criticism that can be levied against much of this work on Roman institutional history as well as studies of labor organizations and relations is that it often takes a fairly narrow view of the issue, concentrating on one or two regulations that tend to be fairly constrained in time or space. This has led to some problems with exactly how to interpret or generalize from some of the points made by scholars working on the topic.

Others have engaged even more directly with ideas outside of ancient history. There have been a handful of studies employing loose models of economic growth derived from modern economic theory or from work on more recent—and better documented—societies. These models are then related to the admittedly spotty ancient evidence in order to produce likely ranges and best-guess estimates. These works focus largely on demographic and structural dynamics, offering competing measures of the size of various aspects of Roman

13 Perry 2006; Liu 2008, 2009; Broekaert 2011.

14 A few notable attempts have been made to problematize the distinction explicitly: Erdkamp 2005; A.K. Bowman and Wilson 2009; von Reden 2010b; Scheidel 2015b.

15 Bernard 2016; Erdkamp 2015a; Terpstra 2013; Verboven 2002; Zuiderhoek 2009. More on this below, especially Chapter 4.

life: the overall population, different segments of a society (elite landowners, peasant farmers, wage laborers, etc.), the number and size of cities, the level of market activity and integration, and the relative importance of different economic sections, namely whether the early Empire saw a shift away from agriculture and towards non-agrarian, or at least indirectly agrarian, industries such as textile production or even the service sector.[16] These measures are then fit into larger arguments about the size of the Roman economy, both in terms of aggregate productivity and per capita levels of production and income,[17] as well as accounts of how an ancient state could have achieved productivity gains through changes in the composition of the labor force, advances in specialization, investment into production, and increased consumption leading to market development. Not only are all of these conclusions in dispute, but the very measures used to bolster the claims are doubted by many historians.

5 From Fine-Grained to 'Big Picture': Methods and Treatment of the Evidence

We are left, then, at something of an impasse with many of these debates. Certainly, tremendous progress has been made in recent years expanding our knowledge of an enormous array of material evidence concerning Rome's economic structure and function. What have not received a great deal of scholarly attention, though, are more synthetic, broader overviews of all this material. The work that has been done is often criticized or simply overlooked by more 'traditional' historians of classical antiquity. Indeed, ancient history has a long tradition of aversion to 'Big Picture' research that incorporates numerous different types of material, let alone large-scale cross-cultural research into Big Questions about, for instance, the nature of state formation, the impact of religious systems, or generalizable causes of economic growth.

Keeping away from such Big Picture studies, cross-cultural work, and more direct engagement with theories and methods developed outside of ancient history prevents any potential benefit that this work could have for scholars of the Roman world. In particular, the study of the Roman economy is by its nature a fairly expansive topic: scholars are interested in identifying the

16 Jongman 2009; Scheidel 2009d, 2010; Temin 2013; D. Rathbone and Von Reden 2014; Kron 2014; Erdkamp 2015a.

17 Getting accurate and reliable measures of output as well as population form key components of the debate over ancient economic growth, though have proven quite difficult to substantiate; see Chapter 5 for a more detailed discussion.

underlying causes of increases in productivity, exploring the nature of market development, tracing the wider effects of urbanization and monetization, and similar issues. Answering any of these questions appropriately involves by necessity bringing together many different types of evidence and exploring large areas over fairly long time periods. The imperial Roman economy is a broad, multi-faceted topic that requires an equally broad level of analysis. Put simply, a Big Picture outlook is needed to capture all of the interrelations between these numerous factors. Fortunately, although such work is still hard to come by, the situation does seem to be improving, as an increasing number of scholars have been engaging in large-scale questions touching on ancient Rome in recent years. A small number of ancient historians have attempted extensive surveys of the evidence, looking for general patterns on a truly global scale.[18] Others have explored the possible impact that environment and climate played on social and economic development in the ancient world, taking a very macro-level view of material covering long periods and huge swaths of territory to identify very long-term dynamics. This work has, and continues to have, a major impact on our understanding of the past.[19] Due to space constraints, I do not engage with issues of environment or climate much here, but this is an important facet of Roman economic development that needs to be explored alongside other material.[20]

My project here is inspired by much recent work in the social sciences, particularly in economic theory, economic history, political science, and anthropology. In large part this is methodological—my arguments do not proceed from close scrutiny of one or two bodies of evidence, inductively building up explanations to account for that evidence. Rather, wherever possible I take the opposite tact, exploring contrasting accounts for the behavior and structure of the western Roman economy, then surveying a diverse body of evidence in order to test the overarching accounts. This approach also helps make the evidence itself more readily interpretable: the theories and explanatory frameworks make it clear what evidence would support—and, just as importantly, refute—the differing explanations of Rome's economic behavior. Tracing out the implications and effects of accepting one of these broad notions of the Roman economy over another helps to synthesize a wide array of material, drawing connections and correlations between various developments to reveal the larger picture: the chief aim of the book.

18 Morris 2013; Scheidel 2013; Monson and Scheidel 2015.

19 Horden and Purcell 2000; McCormick et al. 2012; Haldon et al. 2014; J.G. Manning 2015.

20 J.G. Manning (forthcoming) offers just this type of holistic analysis.

I want to make it very clear from the outset, however, that I am not engaging in what can be properly called 'scientific' analysis here, meaning establishing formal, mathematical models based on competing theories and testing the predictions of those models through quantitative, statistical analysis. It is important to note though that such methods are not foreign to the study of the ancient world and are, in fact, becoming increasingly important tools for answering the sort of Big Questions that historians and social scientists seek to solve.[21] What I offer here, rather, is an attempt to blend the approaches, starting out with loosely-formulated accounts of how the Roman economy could be conceived based on previous work by ancient historians and some of the recent theories proposed by economists, political scientists, and economic historians. I then test the various implications of these general accounts by reference to the available evidence, drawing out the wider implications of accepting a particular account of how we understand the interrelationship between the different aspects of Roman social, political, and economic life.

Overall, I touch on many different types of material, from ancient coins to epigraphic texts to ceramics to excavated remains of buildings and manufacturing equipment, rushing quickly back and forth through each. This is because my focus is on the broader story, the larger framework that formed part of the overall Roman economy. I do at points delve into close analysis and quantification of some of the material. I must confess, however, that I am far less interested in any specific piece of evidence, or what it can tell us on a very localized level, than I am in identifying broad patterns. My goal even with these closer readings, then, remains to offer a wide survey of the full range of evidence in order to assess how it fits into these more general accounts of Rome's economic functioning. Furthermore, I keep the quantification at a minimum in this work, for my primary aim here is survey and synthesis. I am careful to analyze a wide variety of material to see what it does and does not reveal about different types of activity. This is crucial for testing different potential alternatives. For instance, rather than counting up all of the evidence for state-led construction of urban infrastructure to derive some absolute number that would be open to numerous interpretations, I count up all of the evidence for the construction of urban infrastructure in general and see whether the relative numbers support the idea that the state was largely responsible for this building, or some other group.

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21 Turchin 2008; Turchin et al. 2015.

In general, then, my method is a combination of social science techniques, referencing various bodies of theory and constructing some alternative accounts of the interrelationship between Rome's economic facets, together with more traditional historical research, reading the material evidence and constructing historical narratives. I am aware that my approach and especially my treatment of the material will rub many historians the wrong way. True, I do not discuss the nitty-gritty details of specific pieces of evidence. This is by design, as I am trying to survey huge amounts of material and test arguments about very broad patterns. Indeed, my study of the material is approached from a rather high-level of abstraction. This is not a better or more appropriate approach than scholarship which offers a lower-level, intense detailing of a smaller body of evidence. Rather, I view the two approaches as entirely complimentary and, indeed, mutually beneficial: my synthetic approach relies on the careful work of others, while the broad conclusions I reach can lead more focused studies towards new and interesting directions of research. I ask only that readers keep these methodological differences in mind when assessing my somewhat casual treatment of evidence and evaluating the claims I make here.

6 The Contribution of Modern Thinking to Ancient Problems

Aside from methodological concerns, my work has been heavily influenced by some of the specific arguments made by scholars outside the field of ancient history in recent years, which carry some very intriguing potential rewards for studying the Roman economy. Some of the most burning questions faced by modern scholars and policy makers revolve around the nature of economic growth and the precise relationship between a society's economic output, its political and administrative systems, and its inhabitants' overall quality of life. What causes economic growth? How is growth sustained? Is growth always the same, or has it differed in time and place? What is the relationship between economic growth and political/social stability? Under what circumstances do economic gains in a society translate into improvements in the well-being of people at every social level? What has led to the sharp global and regional differences in economic performance both in modern times and, indeed, throughout history?

In seeking answers to these questions, economists, development scholars, and economic historians have traditionally put nearly all of their attention on direct measures of economic productivity. Mainly, this has involved tracing economic output at the country level (GDP or GDP per capita), though

increasingly also in terms of the distribution of that output within countries (household income, wages, income distribution, etc.).[22] This includes the work of economic historians, who likewise mostly focus on such output measures, seeking to extend these calculations back in time as far as possible in order to trace the growth in economic output of specific countries.[23] A primary goal of this research has been to explain why the Industrial Revolution occurred when, where, and how it did and to understand why the rewards of industrialization, again measured largely in terms of economic output, have been so unevenly distributed, resulting in the great economic disparities of the modern world.

Crucially, however, the utility and applicability of output-based measures of economic performance for understanding overall societal development, especially those reliant on GDP or GDP/capita figures, have been challenged in recent years. Many researchers in economics, political science, and the social sciences now argue that such measures fail to appropriately capture general well-being: the physical and social health of individuals; their access to goods and services; their social, personal, and political security; or the rewards that come from high levels of equality in the distribution of income, access to public goods and social networks; and the potentially beneficial impact of particular socio-cultural systems.[24] The trend is now to explore all of these different aspects separately under the label of overall social well-being. That these different elements may be crucial for people's quality of life is perhaps not so surprising; still, bringing together measures of these things into an economic framework along with more traditional calculations of income or GDP is a fairly recent—and absolutely fundamental—change in the field. Roman historians have long been interested in all of these features as well, though they have rarely been systematically and explicitly incorporated into a single framework as part of Roman *economic* life. The insights and concerns of this burgeoning well-being research have the potential to dramatically alter the way we approach the Roman economy—and all other historic economies, for that matter—leading to new questions being asked, different material being brought to bear, and some novel insights into some of the old problems.

Perhaps the most surprising part of these recent developments, and the aspect which probably requires the most explanation, are the theories concerning the economic impact of certain cultural traits. These traits refer to

22 E.g. Sachs 2005; Rodrik 2008; Piketty 2014; Boix 2015; Atkinson 2015.

23 Maddison 2001; Clark 2007; Allen 2009; Van Zanden 2009; Milanovic, Lindert, and Williamson 2010; Broadberry 2013.

24 Putnam 2000; Guiso, Sapienza, and Zingales 2006; Fitoussi, Sen, and Stiglitz 2009; Spolaore and Wacziarg 2013.

the norms or 'unwritten rules' of any social group that affect people's behavior as much as, if not more than, formal institutions. Research in this growing sub-field is often multi-disciplinary, involving economists and historians working closely with sociologists, anthropologists, and even biologists. Although still in its infancy, this work has produced some compelling arguments and adduced empirical evidence showing that cultural norms are strongly linked to economic performance, often by influencing how a society's formal institutions ultimately function. For instance, the same formal institution concerning the legal enforcement of a contract will not be utilized in the same way, and therefore not have the same economic effect, in societies where people have different cultural predilections for appealing to the legal authorities.[25]

Interestingly, it is understood that these economically-influential cultural traits are less malleable than formal institutions, developing over multiple generations. Indeed, biologists trained in evolutionary theory have recently begun to tackle the issue of how human cultures evolve and change over time, shaping the course of not only social, but political and economic development as well.[26] A primary driving force behind this novel research is the notion that evolutionary theory might be able to explain more thoroughly than traditional economic scholarship the very long-term dynamics of critical systems. The logic here is fairly simple; if cultural norms and broad societal expectations do indeed affect the way that people interact, conduct business, and engage with more formal institutional systems, then it is necessary to understand how these cultural traits develop, spread, and evolve across time and space. Central to the concept of this cultural evolution is the idea that cooperation within groups is a key to surviving inter-group conflict and competition. Cooperation on a massive, society-wide scale involves the ability of states to corral large sections of the population to fight wars, to get laborers to engage in large-scale works projects, and to collect surplus resources through taxation or tribute. Collected resources can facilitate cooperation by, for instance, being redistributed to the population in the form of public goods and other benefits, fortifying the loyalty of the population and stability of rule. Much evidence is being offered showing how important these abilities have been in determining military success, political and social stability, and economic growth in different societies throughout history.

25 Tabellini 2010.

26 Turchin 2003; Richerson and Boyd 2005; Richerson and Christiansen 2013; D.S. Wilson, Ostrom, and Cox 2013; Turchin 2014; Henrich 2015.

The ability of large groups to cooperate on common tasks, however, is incredibly difficult to achieve and, thus, societies exhibit a great deal of variation in their degree of cooperation. This is where culture comes in: cultural norms develop that either promote or hinder the proclivity of different groups of people to cooperate—termed *prosociality* when cooperation on a large scale is achieved. Prosocial norms such as moral imperatives to donate time and money to charity, or social pressure to enlist in the armed forces, exert a powerful influence over individuals' actions. Moreover, prosocial cultural traits can determine to a large extent the ease with which a state collects taxes, or how much trust the parties to a business contract have that each will fulfill their side of the agreement, along with a host of similar benefits. These traits, thus, produce indirect economic benefits such as lowering transaction costs, or increasing the scale and efficiency of producing public works and other collective enterprises, significantly affecting the society's overall economic performance. Much more work remains to be done to outline precisely which traits play which roles in the economic growth and political stability of different states throughout history. Still, it is becoming increasingly clear that exploring these issues from an evolutionary perspective can offer novel and compelling insights.

I am no biologist, nor an expert in evolutionary theory. But being aware of these theories changes the way that I approach Roman history, being always mindful of the long-term dynamics of different traits, of the importance of addressing well-being and development with a battery of interrelated measures, and of the inexorable link between evolved cultural traits, formal institutional features, and economic outcomes. All in all, engagement with the theories, ideas, and approaches noted here provides a novel take on the familiar issues involved with studying the Roman economy. Indeed, wanting to begin to address some of the growing disconnects between the concerns of Roman historians and recent advances in political and economic theory was a major stimulus for writing this book to begin with.

7 Book Organization

The Chapters here focus on some of the more difficult and controversial elements of the Roman economy. In Chapter 2, I explore the complex issue of **elite competition and Rome's culture of prosociality and benefaction**, tracing out the economic implications of this important elite activity. I note further the knock-on effects for the development of the monetary system and financial mediation, including investment capital creation, credit circulation, and

market growth. Chapter 3 continues this discussion, focusing specifically on investment and the implications of active monetary and market systems on **Rome's productive economy** along with the ways that money tied together Rome's urban and rural areas. Chapter 4 problematizes the distinction between public and private activity by looking closely at the **economics of public buildings and urban development**. Combining the issue of urban infrastructure and the problematic relationship between public and private interests in the Roman world together with the arguments of Chapters 2 and 3 will, I hope, help to clarify the place of Rome in a global history of pre-industrial political economies. This all then culminates in Chapter 5, where I delve into the controversial issues of **growth and well-being**. I argue that the traditional focus on intensive versus extensive growth in the early imperial economy is somewhat misplaced and that more pertinent questions revolve around the ways that wealth were distributed throughout the population, especially through public goods creation, and what the implications of this were for the quality of life of different groups of people. Finally, Chapter 6 offers a test of the significance of the various causal forces identified in earlier Chapters by looking at what happened to different parts of the western Empire during the **tumultuous third century CE**.

8 Terms and Definitions

I have avoided, as far as possible, terms and language that will only be accessible to Roman specialists and those with a reading knowledge of classical Latin. This is to make the work more accessible to scholars outside of Classics. I have tried to explain concepts and terms that will be very familiar to Roman historians and may even seem to be unnecessary, but again it is important to clarify the issues at stake so that all readers can understand the force of the arguments being made without being sidetracked by definitional problems. Certain terms are difficult to translate directly or are key to my argument, such as the terms describing 'public' versus 'personal' money or the names of different coin types. Such terms are referred to in Latin, but an explanation or possible English equivalents is given. For instance, the primary unit of account and one of the most important types of coinage in the Roman monetary system was a bronze coin called a *sestertius* (plural *sestertii*), which I refer to as such because it is was not the only bronze coin minted, so it cannot be called simply the 'Roman bronze coin' and it is too cumbersome to always explain which coin is being mentioned in each case. Hopefully these unavoidable non-English terms and phrases will not detract from the flow of the argument.

CHAPTER 2

The Gift That Kept On Giving: Perpetual Endowments and the Role of Prosociality in Rome's Economic Development

In this Chapter, I explore the epigraphic material concerning endowment funds established by wealthy, elite Romans in the western half of the Empire. This is not because this small body of inscriptions is, on its own, of fundamental importance for understanding the imperial economy. Nor is it even particularly interesting, at least when explored in isolation. Rather, these endowment funds are epiphenomenal of a wider, substantial, and sophisticated market for credit and investment capital that existed in the Roman world, one which operated largely out of the sight, or regulation, of the imperial state. Without doubt, Rome's monetary and financial systems were intricate and incorporated at once barter, exchange of metal currency, as well as fairly widespread credit.[1] Understanding the nature of all of this activity and exploring some of the ways that money and credit circulated in the economy sheds light on the intricate relationship between different facets of Rome's financial economy. Moreover, these endowments were really just one part of a more general program of benefactions performed by Rome's elite throughout the Empire.

I begin this chapter by presenting a peculiar interpretation of how certain key Roman cultural traits came to develop over the course of Rome's early history. This may strike many readers as something of a tangent, but understanding the way that some of Rome's fundamentally important cultural habits developed over time from the early days of the Republic—even if only surveying the issue broadly as I do here—is critical in exploring how Rome's economic development during the imperial period. These cultural traits will be referenced time after time throughout this book, so it is important to contextualize them from the outset. After this brief overview, I describe in some detail how elite benefactions worked in the imperial era. I then offer a fairly close study of the different aspects involved in creating and managing an endowment fund and how these operations touched on all sorts of other economic facets. Overall, I seek to trace out the full ramifications of all of these interrelated features

1 Ferguson 2008 and Graeber 2011 offer interesting accounts of how early and pervasive things like debt and credit have been throughout human history.

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for understanding the Roman economy as a whole. This will then set the stage for the discussions in the following chapters.

1 The Evolution of Prosocial Traits from the Early Days of Rome

I explained in the introductory chapter that much recent theoretical and empirical work stresses the importance of cultural traits in influencing economic development. This goes beyond formal rules and informal constraints that direct people's choices and activity; it is also about understanding how the long-term evolution and persistence of cultural norms also contribute to the way that people think, interact with others, and generally approach the world. These two aspects—institutional constraints and cultural norms and values—actually work together to shape the way that people behave and, hence, the way that economic activity develops. This has been understood for some time, even stressed in some of the later works by Douglas North, the 'founder' of New Institutional Economics, as well as in several important recent studies.[2] One economic historian, for instance, has shown that different regions within a single country, North and South Italy during the 19th century, had developed distinct cultural norms concerning generalized trust and adherence to rules and regulations. He shows how these differences can explain the divergent economic outcomes in those regions, in spite of the entire country being united by a single set of formal institutions.[3]

There are many theories about how and why different types of cultural traits develop within societies. One of the most compelling approaches to the issue is the relatively young field of cultural evolution.[4] This approach tries to explore how certain traits rise and fall over the long-term within a society, exploring the interaction at different levels—the individual, group, state, and inter-state levels. One of the key traits identified by cultural evolutionary studies is what is called *prosociality*, namely the ability of large groups of individuals in a society to work together for a common purpose. This working together is fundamental for societies to overcome external threats, get around problems of collective action, and develop systems and institutional structures that allow

2 North 2005. The economists Avner Greif and Joel Mokyr explain this well in a recent article (Greif and Mokyr 2017).

3 Tabellini 2010.

4 Notable recent works on cultural evolution include: D.S. Wilson 2002; Boyd and Richerson 2009; Mesoudi 2011; Richerson and Christiansen 2013; Turchin 2014; D.S. Wilson, Ostrom, and Cox 2013.

for (relatively) equitable treatment of all the society's members. Prosocial traits include things like trust and adherence to rules and manifests most clearly in terms of the cooperation between individuals or groups within a society, within social strata, between elite and non-elite, and between state agents and the general population.

Cultural traits like prosociality, generalized trust, adherence to moral norms, and other deeply-engrained values hold an incredibly powerful influence on the way we interact with others and on the types of activity we are willing to pursue. These in turn go a long to way to determining the course of economic, political, and social development within any society, the Roman Empire included. As mentioned, many economists working on more modern periods have begun in recent years to explore the impact of culture on institutional function and change. This perspective, it should be noted, is slightly different from that of cultural evolution, as the latter approach is more concerned with explaining the forces and outlining the dynamics that lead to various 'packages' of cultural traits becoming more or less prevalent in a society over time—what drives an increase in charitable spending among a society's elite, for example. Conversely, the former is chiefly occupied with exploring the way that these traits impact people's interaction with more formal institutions, such as the monitoring and enforcement mechanisms required to ensure that people obey traffic laws or other regulations—the more that a culture values 'obedience', the more people will self-enforce such regulations.[5] Generally speaking, works considering the impact of cultural traits on economic development have not had the same impact on the study of Roman history as those focused on just formal and informal institutions, following a NIE method. There have, of course, been many valuable studies on Roman culture,[6] but for the most part these do not deal directly with the consequences of Roman values and norms on the imperial economy.[7] Yet, these traits are just as important as institutions for understanding how and why the Roman economy functioned the way that it did. It is critical, then, to put these different strands of material together and

5 Currie et al. 2016 provide an informative overview of these different approaches to institutional change.

6 An excellent resource on Roman cultural practices is Peachin 2011.

7 Interestingly, the traditional approach to the Roman economy, following Finley, did stress the impact of cultural or social traits on economic development, though to Finley this meant that ancient economies stagnated under the limitations of cultures hostile to investment, innovation, and financial mediation. Ian Morris offers a cogent overview of Finley's approach to ancient economics as well as a summary of more recent critiques of his conclusions in his introduction to the 1999 edition of Finley's landmark *The Ancient Economy* (Finley 1999).

explore the evolution of Roman culture, especially prosocial traits, and then examine how these traits interacted with more formal institutions.

The evolution of Roman cultural traits deserves its own treatment, but some general remarks are pertinent here to help frame the discussions which follow. Rome was founded as a relatively small city-state in central Italy sometime in the archaic period, around the middle of the 8th century BCE.[8] From these humble archaic roots, Rome grew to become *the* major hegemonic power first throughout the Italian peninsula, then the entire Mediterranean basin by the end of the second century BCE. Perhaps surprisingly, one of the most crucial features of Rome's incredible rise to power was the intense and unceasing competition that embroiled the city. From the very beginning, Rome was surrounded by rivals on all sides, competing for control of the same patches of land and other resources in central Italy. To the North (modern Etruria) sat a network of older, larger Etruscan city-states; to the South (Campania) were Greek colonial settlements; to the East (Molise, Apulia, etc.) were the tribal groups of Samnium, Umbria, and other Italic groups.

From its early existence, the city of Rome was ruled by Kings of Etruscan descent, essentially making Rome one in a series of Etruscan city-states in central-western Italy at the time; and a relatively small one at that. At the end of the sixth century BCE, Rome expelled the last of these Kings and established herself as an independent city, ruled by a Republican form of governance. Almost immediately, Republican Rome started to grow, and throughout the fifth century it expanded its military power, grew its population, and acquired new territory in central Italy. Rome soon emerged as one of a handful of important powers in Italy along with the Etruscans, the Samnites, and communities of Greek colonists living in the southwest. Rome's rising power attracted attention far and wide. In 390 BCE, a French tribal group known as the Gauls invaded Italy to plunder the various civilizations. The Gauls breached the walls of Rome itself and looted the city but then retreated, choosing not to stay and capitalize on their victory. They returned to France instead, leaving the Italian civilizations to recover and turn their attention to each other. Following the shock of the Gallic sack, Rome began expanding farther and farther into territory held by the Etruscans, Samnites, and Greeks. In a bloody series of wars during the fourth and early third centuries BCE, the Romans all but eliminated these groups from Italy, taking over their land and absorbing much of their

8 The traditional, though largely mythic, date ascribed to Romulus' founding of the city which bore his name as 753 BCE. On the myths and traditions of early Rome, see notably Cornell 1995; Raaflaub 2006.

populations into the growing Roman state. At the critical Battle of Sentinum in 295 BCE, Rome defeated the Etruscans and Samnites, who were both aided by Gallic forces fearful of Rome's mounting power. This victory left Rome essentially in control of the entire Italian peninsula.

The story of how Rome grew from being the dominant power in Italy by the beginning of the third century to being one of the largest and most powerful Empires the world has ever known by the end of the first century BCE is one that has been told countless times, and will be familiar to most readers. I will spare readers from rehashing this in great detail.[9] What matters here is that, as the first century BCE came to an end, Rome found herself in control of almost all of the lands in the Mediterranean basin, from Spain to Syria, Egypt to Britain.

There were many factors that led to Rome's success. What I want to focus on here is what happened in those very early days, in roughly the sixth–fourth centuries, and especially the developments in politics and culture that gave Rome the edge over other Italian societies.[10] From the city's beginning, Rome's political, social, and economic life were dominated by a wealthy, landowning elite, the noble lineages who traced their ancestry back to the city's earliest foundations. As one noted historian of the period puts it, however, by the end of the fourth century, "The exclusive aristocratic society of early Rome was replaced by a unified and cohesive citizen body, and although this was still led by an almost equally exclusive aristocracy, all classes were integrated and had their defined rights, obligations, and functions."[11] This reformation entailed a long process of socio-cultural and political change that played out over centuries as Rome continually faced both competition from external powers as well as growing turmoil internally. This internal strife, known by historians as the Conflict or Struggle of the Orders, essentially saw the non-elite masses—the *plebs* as they were known by the Romans ('common people'; the *hoi polloi* of the Latin-speaking world)—grow increasingly dissatisfied with their lack of political, social, and economic power *vis-à-vis* the ruling, landowning elite.

In order to explain these internal changes, however, it is necessary to understand better the external pressures Rome faced during this period. As mentioned above, Rome was founded and initially ruled as a kingdom, led by kings of Etruscan descent. Even during the early days of the Republic, Rome was

9 For those interested or who may be less familiar with Rome's rise to power, Boatwright et al. 2012 offers an excellent, clear overview of Roman history and the key factors involved.

10 See notably Raaflaub 2006; Eckstein 2006; Bispham 2006; Rich 2008; Hoyer 2012; Rosenstein 2012.

11 Raaflaub 2005, 4.

surrounded by other older, larger societies on every side—Etruscans, Greco-Italians, tribal groups of Samnites, Oscans (from Umbria), and other peoples. All of these groups were looking to maintain their territory and, wherever possible, expand into the others' areas of control and capture resources like agricultural land, pasturage, or mineral resources away from a rival. They were all playing in a deadly, zero-sum game of expansion and survival.[12] The presence of these other groups posed a near constant threat to Rome's survival as an independent city and led Rome into this same zero-sum game. This meant that Rome needed to develop institutions and cultural systems that would increase cohesion among its members. Since cooperation was the only way Rome could continue to grow and develop without being overrun by these other groups, it meant that Rome's elites were particularly beholden to the interests of the city's poorer residents, since their willingness to serve in the army was essential for the city's defense. These pressures created the context in which Roman society developed, creating powerful incentives for Rome's wealthy, politically powerful citizens to pay attention to the needs of all Romans in order to develop the sort of cohesive society needed to thrive in this competitive environment. This is not to say that Rome's elite were cognizant of this and chose consciously to create a prosocial society for these reasons. The point here is that the pressures generated by the competitive environment that existed in Italy at the time were sufficient to ensure that only policies working towards this aim would win out, regardless of any individuals' motivations.

It was in this competitive environment, with all the pressure and struggle that it entailed, that Rome developed the key political, military, social, and cultural traits that would bolster them in their long ascent as a leading power. During the city's early years, political and military offices were the exclusive domain of Rome's elite lineages. As the city grew in size, power, and wealth, all available property was increasingly being gobbled up by these same wealthy families, leading to landlessness and debt among the poorer members of society. At the same time, these poorer citizens bore the heaviest burden in filling the ranks of the military force on whose back Rome's expansion stood in the first place. At some point in the early fifth century, the *plebs* had had enough and decided to protest their inequitable treatment at the hands of Rome's

12 See Eckstein 2006 and Hoyer 2012 for more full accounts of these developments. Interestingly, Hui 2005 describes a nearly identical situation in northern China during the 4th–2nd centuries BCE, which lead to the dramatic expansion and rise to power of the Qin Empire in a sequence of events offering striking parallels to Rome's ascent. See also Scheidel 2009b and 2015a for more complete descriptions of the similarities between the Roman and Qin-Han Empires.

elites. They actually got together and refused to fight in another battle until their demands were met. Thus began the Conflict of the Orders. Rome's leading families eventually relented, enacting a series of reforms that dramatically increased the political participation of lower classes, abolished debt slavery, and engaged in several land distributions, aided by the fact that the now cohesive population continued to conquer territory that could be redistributed.

These reforms and other regulations enacted over the next two hundred years or so did in no way end resentment nor did they erase all disparities in power, prestige, or even successfully thwart the accumulation of property by the wealthy. What they did accomplish, however, was to create a more equitable society, one at least that seemed to be fair and proper and so gained the support and, most importantly, the cooperation of all Romans in its maintenance. What was generated during these early struggles, in other words, was a culture of *prosociality*. This prosociality, the coherence and cooperation of the population in the common goals of the state, played no small part in Rome's political and military successes over the latter half of first millennium BCE.[13] It was rooted in a culture that evolved through internal struggles in a context of intense external competition and continued to thrive and to become ever more embedded in Rome's social fabric as the state continued to find success. Critically, these reforms and the development of these prosocial traits follows precisely the predictions of cultural evolutionary theory, lending support to that work as well as demonstrating its utility in offering novel insights to the Roman case.

The basics of this prosocial culture were summed up rather neatly in a recent survey of Rome's early development: "The elite, on whose qualities of leadership the community depended, developed a specific system of values that focused entirely on these qualities and on service for the community, and exceptional cohesion that helped control constant fierce competition for the highest ranks and offices .... The commoners learned to value discipline and solidarity too."[14] The critical point here is that, in the face of extreme competition and conflict, Rome developed early on a culture of cooperation and

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13 This is not to say that the evolution of these cultural traits are by themselves a *sufficient* explanation for Rome's early history. Certainly, other factors were essential as well, including Rome's formal institutional features, such as its phalanx-style military, the institution of establishing colonies and so expanding in size and power with nearly every military victory, and the benefits of a clearly delimited governing hierarchy. Also, Rome was aided by fortuitous events beyond their control, for instance the fact that Samnite tribes were politically disunited and had difficulty in reaching collective decisions, so failed to capitalize on their victories, of which they had several important ones during this period.

14 Raaflaub 2006, 141.

mutual support between social classes. For the majority of the population, the non-elite, this meant participating in military conflict, contributing to public finances through tax and labor obligations, and by simply acquiescing to the *status quo*; in other words, accepting the fact that the noble lineages still held the lion's share of land, wealth, political power, and social prestige. For their part, these powerful elite were charged with maintaining a basic level of support for the rest of the community, including limiting their extraction of surplus wealth (through taxes, rents on land, labor requirements, etc.) to manageable levels, providing some public goods like water supply, and providing for public security by upholding religious traditions, performing justly the duties of political and judicial offices, and overseeing Rome's international relations.

I do not meant to paint an overly rosy picture of Rome's social cohesion. Certainly, poor people were exploited in many ways by the rich and powerful, and huge inequalities in wealth, power, and access to various goods, services, and positions were tolerated. There were also moments when the system seemed to break down, as during the late Republican period at the end of the second century BCE when elite competition devolved into a protracted and bloody civil war. Even such breakdowns, though, actually support this reading of the importance of Rome's cultural norms. For, by that time, Rome had reached preeminence in the geopolitical climate of the Mediterranean basin. Rome's success had removed the major driving force behind its evolution of these prosocial traits, namely the intense competitive environment. Economic and demographic expansion led to what some social scientists call 'elite overproduction',[15] namely a rise in the number of people born to wealthy, powerful families along with others seeking to climb the social ladder without a concomitant expansion in the opportunities for elite activities. In other words, there were more people with or looking for wealth and power, but the amount of land that was 'up for grabs' had stopped increasing, nor were there a host of new positions in public office to express social and political glory. The *external* competition of Rome's early days that had helped spawn social cohesion gave way to increasingly intense *internal* competition among the elite, leading ultimately to violence and social breakdown.

This breakdown led, of course, to the transformation of Rome from Republican state to Imperial project, which helped to quell some of the intensity of the intra-elite competition through several interrelated means. The first Emperor, Augustus, took many of the highest and most prestigious political, religious, and military offices for himself, a move that was mimicked by all successive

15 On this, see especially Goldstone 1991; Turchin 2003.

rulers, thereby removing these posts from the competitive field. Additionally, the regularization of provincial rule and the expansion of the Senatorial ranks (as well as the diminution of their real authority) diffused a lot of this competition away from the city of Rome herself and into the provincial areas. Elite were left to strive for office in the many towns and cities scattered around the Roman Mediterranean, with only a handful advancing to meaningful public careers in the more limited central government in Rome. Finally, the loss of life during the nearly 100 years of civil fighting that brought the Republic to a close thinned the ranks of the elite, relieving some of the pressure on the competitive arena.

The intra-elite competition did not die with the Republic, but in many ways recaptured its earlier structure, though now on a more diffuse provincial scale, and spread many of these critical prosocial traits throughout the Mediterranean.[16] The main point to take away from this discussion is that a strong, widely accepted culture based on cooperation and mutually supportive duties spawned particular traits that evolved over time as Rome expanded, remaining highly influential in the decisions and actions undertaken by people living throughout the Roman world at least into Late Antiquity. What did this mean in practice for elite activity in the western Empire and how did this affect the economy? As in the earlier Republican period, the unspoken 'bargain' underlying the cooperation and cohesion on which Rome depended meant that elite Romans were charged with the upkeep of social and religious values, volunteering to hold public office and performing their duties honorably and justly, and ensuring that the less well-off members of their communities were not exploited beyond a reasonable limit and had access to a basic level of goods and services. The key to this whole system was that elite citizens acted as patrons of their communities, embodying traditional Roman virtues in their public lives and providing benefits to local populations. This public service helped people look the other way as these same 'honorable' elite gobbled up land, got rich charging high rents to tenant farmers, exploited the labor of slaves and laborers earning fairly low wages, and monopolized the exercise of authority. No repeat of the Conflict of the Orders was known in the imperial period.[17]

16 Though the eastern Mediterranean already had a long—though complicated—history of prosocial activity. See Eckstein 2008; Zuiderhoek 2009; Monson 2012 for interesting discussions of a similar competitive environment in the eastern Mediterranean during the Hellenistic period, prosocial activity by the elite, and the changes brought about by Roman rule in the region.

17 Some leading citizens exploited populist sentiments during the late Republican civil conflict to gain support from the sub-elite population, particularly soldiers. This was a

2 Prosociality, Charity, and Social Capital: How Elite Benefaction Came to Be

This brings us—finally—to the main topic at hand, namely the custom of elite Romans throughout the western Empire of providing benefactions to their peers and members of their local communities.[18] Benefaction (often called 'munificence' after the latin word *munifcentia*) is, essentially, a charitable donation of money, commodities, building material, etc. to a group of people or to a collective organization such as a religious group or even to an individual city. Roman benefactions were normally gifts given to celebrate or honor a specific occasion, typically an election to some public office, but also were made to mark a personal event such as a birthday, or even as part of a last request included in a will. Most importantly, they involved significant sums of money being spent on various sorts of goods, most often permanent structures such as temples, arches, and statues, but included also spending on consumable goods such as feasts and distributions of money or oil to be used in the bathhouse and entertainment like theatrical games, and gladiatorial shows. The first group can be considered properly *public goods*—permanent structures, roads, and other infrastructure that benefited anyone within reach indiscriminately. The latter group, including the more consumable goods supplied by Roman benefactors, are really *private goods* since they are consumed by individuals and access to them can be restricted. Still, because they were often distributed to relatively large groups of people, they belong to the category of goods distributed for the public or some group's communal well-being. This is actually quite an important distinction that I bring out more clearly when discussing the nature and economic impact of public goods in Chapter 5.

Elite benefactions from the Roman world are known mainly from the surviving inscriptions that were set up all over the Empire honoring a prominent, wealthy patron for some benefaction they performed for the community. A typical example is an inscription from the relatively large town of Theveste in eastern Algeria (in the Roman province of Africa Proconsularis) dated between

move repeated often by later Emperors as well. Still, the true rebellion of the archaic period, with *plebs* refusing to fight in battles against external enemies on a grand scale, did not recur.

18 Readers are reminded that my focus here is on the western half of the Empire, but benefaction was certainly as much a feature of economic life in the East as it was in the West. For informative treatments of this topic, see for instance Mitchell 1993; van Nijf 1997; Mitchell, Katsari, and Braund 2005; Zuiderhoek 2009.

166 and 169 CE.[19] Here, a man named Quintus Securus is honored by the town for a variety of benefactions he performed, including decorating part of a temple with golden panels, helping to pay for a statue to the god Saturn, then at the statue's dedication giving a feast for some of the local priests and producing a festival of theatrical performances for the community. The community—or, better, the local councilors and magistrates, Securus' elite peers—then decided to honor the generosity of their benefactor by erecting a large stone slab, likely attached to or nearby the statue of Saturn, with some text recognizing Securus' actions etched (or 'inscribed', hence inscription) into it.

It is apparent how benefactions like Securus' fit into Rome's prosocial culture. It was also a part of the intra-elite competition that persisted throughout Rome's history. As I explain above, the prosocial culture engrained into the fabric of Roman society from its early development privileged certain kinds of actions, leading many people to internalize these as essential duties, matters of honor and their public *persona*. For wealthy Romans, this included serving the public by holding some office, whether administrative, military, or religious, but it also meant looking after the general well-being of the poorer members of society. Part of this culture being such a strong, internalized factor in elite behavior is that wealthy, prominent Romans—and those desiring to become wealthy and prominent—actually competed over this prosocial activity. This may seem contradictory at first blush, but it actually makes perfect sense. Due to the nature of Roman life, one of the key arenas in which this elite competition played out was through ostentatious displays of spending on local benefactions. The logic here is essentially that since elite Romans were expected to 'give back' to their communities and to ensure the well-being of their fellow Romans, it stands to reason that the *best* Roman gives back the most and is the greatest protector of the poorer, more vulnerable citizens. Typically, this form of competition involved elites 'giving back' to their local communities or to specific groups of people in order to gain some social prestige *vis-à-vis* other elite and to gain recognition from the community for their generosity.[20] The pub-

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19 Appendix 2 #567.

20 Ng 2015 offers an interesting recent study of Roman benefaction, arguing that the desire to 'perpetuate the donor's identity' through the memory and record of benefactions, including buildings as well as impermanent gifts such as games, played a major role in incentivizing this behavior. Van Nijf 1997 and Zuiderhoek 2005, 2009 also focus on the social/political motivations of elite benefactors. As I explain below, there were clearly also more tangible economic, political, and social benefits to be had from benefaction. Still, it is important to stress that multiple motivations, including both these tangible and more ephemeral goods like identity perpetuation, seem to have been present simultaneously.

lic proclamation of a patron's gift in the form of honorific inscriptions like the one set up for Quintus Securus were, in many ways, the pay-off received by the patron for the benefaction. It was how their generosity, their great prosociality, was in effect 'advertised' throughout their local communities. Such advertising is, in fact, a critical aspect of the system, though its significance is not always given proper due by economic historians.

This expense was not pure charity, however, as it brought significant returns for the benefactor. First and foremost, it brought *social capital*, the general goodwill and support of certain people in the community. This social capital would have been 'cashed in' for votes when running for some office, or just generally having tacit consent for their elevated status. Additionally, the social capital earned by benefactors would have solidified a range of social and political networks among colleagues and dependents; those who benefited directly from the benefactions as well as the relationships made when making arrangements for how the benefaction was to be carried out, discussed in detail below. Such networks lower transaction costs, allowing people to feel comfortable and secure doing business with each other, making loans to one another, and investing in each other's businesses, which have extremely significant consequences for the Roman economy.[21] Indeed, the goal of generating social capital explains neatly why the group benefiting from the gift was often specified, whether it be town councilors, priests, or local communities at large; the benefactor wanted to express clearly and publicly whom he was choosing to favor with his generosity, engendering social capital in return. We see clearly then how the habit of elites striving against each other for public office as well as the prosocial cultural norms that had been evolving since the early days of Rome's development were, by the early imperial period, so institutionalized and engrained in the Empire's social fabric that spending money on benefactions came to be an expected, accepted, even *desirable* duty of being a member of the elite. Certainly, a strong and self-supporting system.[22]

21 The economic importance of such social networks has been much discussed by economists and sociologists in recent years. See particularly Putnam 2000; Henrich et al. 2004; Guiso, Sapienza, and Zingales 2008. Not much work has been done on these issues as they relate to the Roman world, though for insightful studies of how Roman collective organizations such as trade associations lowered transaction costs, see Verboven 2002; Harris 2006; Liu 2008.

22 This equilibrium was disrupted really only in the third century CE due to a variety of exogenous and endogenous causes. See Chapter 6 for a more throughout treatment of that critical period.

3 Perpetual Foundations: The Gift That Kept On Giving

Typically, the sort of benefactions noted above were one-time gifts or donations marking some special occasion, for instance putting on a big feast to mark the dedication of a new statue of a god, or producing a theatrical or gladiatorial show to celebrate an election to some local municipal office. Sometimes, however, the benefactor intended for his gifts to be given continually, year after year, in perpetuity. In contrast to single-purpose benefactions, perpetual gifts were supported by an endowment given to the community which was meant to draw a steady annual interest that could support the specified benefaction every year. These endowments are known from a sub-group of honorific inscriptions, which spell out very clearly that the good supplied by the benefactor being honored in the inscription was meant to be repeated yearly. They have been found all across the Empire, although are most frequent in Italy and the provinces of North Africa, at least in the western half of the Empire.[23]

Perpetual endowments are a very curious and interesting type of Roman benefaction. They have, therefore, received a fair amount of scholarly attention over the years.[24] Still, precisely how these endowment funds were established and administered as well as what effect they had on the Empire's wider political and economic systems remains fairly mysterious. What they do offer is clear support for the existence and use of interest-generating loans and investments, they reveal some of the likely places where we can see the use of credit,[25] and they provide a glimpse into some of the rudimentary forms of financial mediation known in the Roman world. Furthermore, these perpetual endowments ought to be viewed not as separate, special, or exceptional features of the Roman economy. They were, and ought to be treated as, epiphenomena of the economy at large. What makes them special is that the evidence dealing

23 Again, this overlooks material from the East, which presents a very similar picture to the Western evidence. For more detailed discussion of material from the eastern Empire, see notably Zuiderhoek 2009.

24 The seminal account of perpetual foundations is Laum 1914. Important contributions include Andreau 1977; Duncan-Jones 1982; D. Johnston 1985; Kehoe 1997; Mrozek 2000; Liu 2008.

25 William Harris has led the charge demonstrating the use and availability of credit in the Roman economy, albeit mainly concentrating on loans among wealthy, elite Romans (Harris 2006, 2008). See also notably Howgego 2009; von Reden 2010; Von Reden 2012. While the existence of such financial instruments is now undisputed, much work remains to be done describing exactly how credit and debt was used in the Roman economy, to what ends, and with what results.

with endowments is more explicit about the operation of money and financial instruments than other forms of activity.

If my epiphenomenal reading of endowment funds is accepted, the evidence concerning one-off benefactions—ambiguous and difficult to interpret on their own—begins to make more sense. This is important, for one-off benefactions are very pervasive in our evidence. What we see is that this all fits together as part of a broad, complex system of credit, capital, investment, and financial intermediation. In this light, endowment fund inscriptions, although they represent only a small fraction of Rome's material remains, take on a disproportionate significance for our overall understanding of the imperial Roman economy. Indeed, the very existence of perpetual endowments implies a fairly well-established credit market and, moreover, requires that opportunities for productive investments were readily available. Elite benefactors and the culture that supported this activity also played a critical role in helping to maintain this system. The importance of these latter points cannot be overstated, for they not only help to illustrate the full range of economic activities present in imperial Rome, but also serve to highlight the complex relationship between evolved cultural traits, political systems, and the economy.

In order to really understand this peculiar body of evidence, I explore the issue organized around four key questions concerning the nature and function of perpetual endowments: 1) Who administered perpetual endowments and under what terms? 2) Who were the people donating and benefiting from the goods and services sponsored by the endowments, and how does this material relate to other forms of benefaction? 3) What form did endowments take and what resources did they employ? 4) What was done with the principal used to set up endowments? I conclude this Chapter by exploring the implications of seeing endowment funds as epiphenomena of a fairly advanced financial economy. In the following chapter, I follow up on this discussion with an account of some interesting archaeological material from around the western Empire in order to draw out the broader economic impact of the financial systems described here.

3.1 *How were Endowment Funds Administered?*

As mentioned, perpetual endowments are known mainly from surviving inscriptions which describe money or property being given by an individual to a collective organization in order to fund some benefaction annually and in perpetuity.[26] In total, I have found 158 Latin inscriptions which clearly refer

26 I offered a preliminary discussion of these perpetual endowments in Hoyer 2013b.

TABLE 1 *Count of endowment fund inscriptions from the western Empire by region*[27] *and type*

Region	*Ex usuris* (interest)	*Ex reditu* (return)	*Ex reditu* (land specified)	*Ex usuris & ex reditu*	Total
Italy	53	34	10	3	100
Africa	17	7	1	1	26
Gaul and Britain	10	3	2	1	16
Spain	6	1	0	0	7
Germany	5	1	0	1	7
Sicily	2	0	0	0	2
Total	93	46	13	6	158

to a perpetual endowment of some kind.[28] They are found throughout the Empire, but the majority, at least from the western Mediterranean, come from either Italy or North Africa.[29] Unfortunately, very few of these inscriptions can be dated precisely, whether due to the fragmentary nature of preservation, or simply because no internal evidence is presented that can offer any clue as to when the inscription was produced. This makes it impossible to test theories about the dynamics of this sort of financial activity on time-scales shorter than a few hundred years. Most of the dated inscriptions that we do have, however, suggest that the majority were produced between the mid-second century and the late third to early fourth centuries CE.

27 Each Region named here includes a number of Roman provinces: *Italy* = Italia; *Africa* = Africa Proconsularis, Numidia, Mauretania Caesariensis, Mauretania Tingitana; *Gaul* = Gallia Narbonensis, Lugdunensis, Aquitania, Belgica, Alpes, Britania; *Spain* = Baetica, Lusitania, Tarraconensis; *Germany* = Germania and Superior, Raetia, Noricum, Dalmatia, Pannonia Inferior and Superior; *Sicily* = Sicilia, Corsica and Sardinia.

28 See Table 1 for a regional breakdown of endowment inscriptions. Again, I limit myself to the Latin evidence from the western half of the Empire for clarity, although the Greek speaking parts of the Empire certainly knew such endowments as well. Indeed, many parts of the eastern Empire had a pre-Roman history of similar foundations. On these issues, see notably Sosin 2001; Zuiderhoek 2009.

29 It is likely that this disparity in the material is simply a reflection of the fact that the majority of Latin inscriptions of any kind have been found in these regions, rather than any particular prevalence for perpetual endowments in these two areas. For an important overview of the nature and implications of the epigraphic habit, along with useful bibliography, see Meyer 2011. See also MacMullen 2000 on regional differences in terms of the spread of Roman institutions, including the so-called 'epigraphic habit.'

The first crucial question that needs to be addressed concerning these endowments, which is also the most tricky and obscure aspect about the material, is how exactly were these funds administered? In other words, what did it mean to give money to a town (its '*res publica*' or town treasury) or other communal organization, like a trade association ('*collegium*')? Who actually administered the money once it was turned over? And how did the intended beneficiaries receive the goods? Unfortunately, direct reference to these matters is almost entirely lacking in our available sources. The inscriptions which detail the establishment of an endowment fund focus entirely on the benefactors, beneficiaries, and the benefactions being provided by the foundation. They are silent on the actual mechanisms by which the funds were meant to operate, which is the likely reason that this aspect of endowments has been consistently overlooked also in the modern scholarship. These mechanisms, though, are perhaps the most important and interesting feature of perpetual endowments and deserve to be explored in some detail.

Potentially, the most rewarding source for understanding how a Roman town would have handled a perpetual endowment is the evidence from Roman legal practice as well as municipal regulations. For instance, there is a well-known foundational charter from Irni, a town in southern Spain established during the Flavian period at the end of the first century CE.[30] Admittedly, the Irni charter never explicitly mentions what happens when someone establishes an endowment with the town or similar collective organism, but some of the provisions are relevant here. Notably, Chapter 79 concerns the regulations for deciding how common funds can be spent.[31] This chapter establishes that a *quorum* of the town's chief magistrates (*decuriones*, a sort of town senate or council) are present when decisions on how to spend the town's public funds are made. It also enumerates the options available to the town's magistrates with respect to

30 The Irni charter concerns only this one specific town and time period. It is, of course, dangerous to assume that its regulations would apply universally throughout the Empire. Since, however, the charter represents the best and most direct evidence we possess, it is necessary to use it as much as possible. Moreover, parts of the charters of the Spanish towns of Malacitana and Salpensa are identical to provisions in the *Lex Irnitana*, proving that some of the regulations were widely applicable, at least in Roman Spain. The charter of the Republican colony of Urso, also in Spain, likewise has much overlap with the later imperial charters, further supporting to this view. For a useful overview of this evidence, see Johnson 1986. It seems safe, then, to assume that the charter's regulations represent the principles followed generally, if not exactly, by similar town charters throughout the Empire.

31 González and Crawford 1986, 173–174, 194.

these funds; namely to alienate, reduce, spend, or lend the money, or to remit funds to a person who is under an obligation to perform some duty for the town. The chapter finishes with a continuation of the items that magistrates can spend money on including: religious festivals and sacrifices, gladiatorial games, theatrical performances and other entertainment, feasts to which certain magistrates are invited, the repair of public buildings, sending embassies to the Emperor or to other towns, paying the salaries of magistrates' assistants, and providing food and clothing for public slaves. Again, the central point of this chapter of the charter is to establish the *quorum* for making decisions on how to spend the town's public funds. Fortunately for us, it articulates some of the typical outlets for such funds, including religious festivals, games, and feasts—precisely the same goods provided as benefactions in the majority of the extant endowment funds.

The regulation concerning the use of Irni's public funds is important, as the editors of the text note, because it carries the assumption that "a [municipality] might have substantial capital sums" at its disposal.[32] The question then becomes how would a town acquire these substantial sums? Provincial towns, of course, collected taxes for the central imperial state, some of which they were allowed to keep for spending on local matters. But there were also other revenue streams to which a town had access, depending on the status of the town.[33] These streams, in essence, were: indirect taxes or dues collected on movement or sale, leasing publicly owned land or buildings, entry fees on public offices,[34] and wealth left with the town as an endowment. Importantly, the Irni charter attests all of these different revenue streams, as it contains numerous references to different duties and fines associated with a variety of activity and carries a provision specifying that the town councilors had the power to rent out public property, with the only restrictions being that proper security had to be given and that accounts had to be made. Although the Irni chapters on spending public funds do not mention endowments explicitly, it is highly

32 González and Crawford 1986, 225.

33 I.e. *municipium* city, *colonia* large town, Latin-rights town, Italian-rights town, etc. Each type had different rights and responsibilities in terms of how much of the tax it collected would go to the imperial state and how much it could keep, what rights it had on surrounding hinterland, and so forth. On these differences, see notably Burton 2004.

34 Certain offices seem to require that newly-elected officials pay a fee, likely as a guarantee that they would have the necessary funds required to perform their duties. The exact nature of these fees—whether they were voluntary 'gifts' that became institutionalized, or how widespread their use was—is disputed. Garnsey 1971a and 1971b are still the best accounts.

plausible that the money or land given to the town's coffers as part of an endowment would be treated as part of the town's general public funds.

We also have an interesting piece of evidence from one of these wealthy, elite Roman benefactors himself. I refer to the very famous letter of Pliny the Younger, a well-educated, rich senator who lived during the last half of the first century CE and into the second. A series of letters he wrote to various friends, colleagues, and even the Emperor Trajan have survived. These treat a variety of topics concerning his social, political, and economic activities. In one such communication, he explains to a friend his preferred method for setting up a perpetual endowment.[35] Essentially, what Pliny recommends is to allow a city to place a sort of permanent tax over part of one's landholdings. This tax, then, counted as the 'annual return' collected by the town that would fund the benefaction, in Pliny's case providing food to needy children. Pliny's letter is the only explicit, detailed description that we have by a wealthy, elite Roman of the practice of setting up a foundation with a city. His recommendations, therefore, have been taken by many modern scholars as the normative practice. When all of the evidence is taken together, however, it becomes clear that the real practice was much more complicated than it is sometimes taken to have been. Notably, although Pliny plainly and explicitly outlines what he considers to be the best method for establishing a perpetual endowment, his letter also makes it clear that this was not the usual practice; the central purpose of Pliny's letter, in fact, was to explain and recommend his own personal, atypical method that he had himself developed. By no means is it an outline of normative behavior. Rather, the first two methods that Pliny describes but immediately dismisses, namely giving money or land under the direct management of the town authorities, are unmistakably the normal ways that perpetual endowments were established. Unfortunately, Pliny does not go into any detail on how these town authorities were meant to act after receiving such a fund.

One of the reasons it is so hard to comprehend exactly how these sort of endowment funds operated is that, as one expert on Roman law puts it, such "municipal issues fall into a curious no man's land between public and private [law]."[36] If we explore this matter a little further, though, we do get some hints about how Roman law conceived of the issue. For example, there is a case recorded by the Jurist Scaevola, a leading legal scholar from the second century CE. Scaevola's opinions on certain cases were part of a compilation of

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35 *Epsitles* 7.18. An interesting discussion of this letter and its importance for understanding endowments in the Roman world generally is Kehoe 1997, 78–82.

36 D. Johnston 1996, 199.

Roman legal thought created under the Emperor Justinian in the sixth century CE known as the *Digest*.[37] This particular case[38] involves a difficult question about enforcing the terms of a trust in the form of an endowment fund that was established with a town. The notion that an endowment fund was essentially a trust created not between individuals, but between an individual and a collective like a town is the best explanation for the legal principle behind the working of such funds.[39] In this example, Scaevola describes a man who left some property to a town so that the income generated from the property's management would support the production of some public entertainment yearly. The town failed to produce the entertainment for four years in a row, however, so a legal action was brought concerning whether the town owed the money it was supposed to have spent on the entertainment back to the benefactor, which Scaevola concluded it did. The principle being expressed by Scaevola is that once a town agrees to accept an endowment, the testator's intentions regarding the specific activities to be carried out must be honored.

This principle holds through all of the evidence that we have concerning how such endowments were administered. In essence, the way these worked is that it was the responsibility of a town's chief councilors to decide whether a fund left to the town would be accepted. Once accepted, the key legal consideration made was that the terms of the endowment be honored, which meant that whatever the fund was meant to produce had to actually be produced. Moreover, and crucially, all of our sources are concerned *only* with the enforcement of the terms of a trust as it pertained to the benefactions produced by the endowment. These benefactions were seen as comprising the 'benefactor's wish', which the jurists considered to be the central issue when a legal question concerning an endowment was brought. Critically, the actual mechanisms involved in a collective, public organism like a town receiving, managing, and discharging a trust are ignored. This is important, for the system left a great deal of leeway for the town's officials to operate as they saw fit. In executing the terms of the trust, councilors would have to generate interest from the initial endowed principal. Yet, since no clear regulations or guidelines for doing this in the public domain appear to have existed, this meant that they would instead exploit the normal, 'everyday' channels of financial activity present in the Roman economy. Such channels do not really show up in the historical

37 See Harries 2010 for a very useful recent summary of Roman legal history and the place of Justinian's *Digest*.

38 *Digest* 33.2.17.

39 On trusts in Roman law generally, see notably D. Johnston 1988.

record, but must have existed and been relatively active in order for endowments to have worked even in principle. These channels were, in other words, the underlying economic reality of which perpetual benefactions supported by endowment funds are epiphenomenal.

3.2 *Who Set Up and Who Benefited from Perpetual Endowments?*

Having established as far as possible what perpetual endowments were, in the main, meant to accomplish and the fairly loose way in which they were administered, it is now time to take a closer look at the actual people involved. I note above the main reasons why wealthy Romans performed benefactions, including those sponsored annually through perpetual foundations. Such activity was motivated by and embedded within the prosocial culture that had been evolving in the Roman world for centuries, spurring the elite Romans who sought glory, prestige, and financial reward by participating in public office to justify their positions by demonstrating their care for communal well-being through this sort of ostentatious display of largess. Critically, the theory-based notions concerning the evolution of prosocial traits, social capital, and intra-elite competition gain empirical support from the evidence itself.

The majority of the benefactors named in endowment fund inscriptions are individuals who held some form of public office in their life. This mainly includes municipal administrators and executive officials along with religious officials as well as provincial-level magistrates and military officials. In all the endowment fund inscriptions known from the western Empire, the proportion of the total number of named individuals who held some public office is 62 %.[40] This includes expressly political posts, such as member of a town council (*decurion*), chief municipal executive official (*duovir*), administrator (*aedile*), among others. I also include here people with religious posts (e.g. *flamen*), which were really indistinguishable from other public offices except in the nature of the duties.[41] To this perhaps should be added also the *Augustales*, a group of priests, often freed slaves, appointed by magistrates for seeing to the worship of the Emperor.[42] If they are included, as such worship was considered an important public duty looking after the common good, this would bring the total num-

40 Figure 1.

41 Religious offices in the Roman world were similarly public, municipal posts attained through election or direct appointment and often had political or quasi-political functions. On the close link between the religious and political spheres in the Roman world, see notably Beard and North 1990; Orlin 2002.

42 On the make-up and role of the *Augustales* in the Roman provinces, see notably Ostrow 1990; Beard, North, and Price 1998, 348–363.

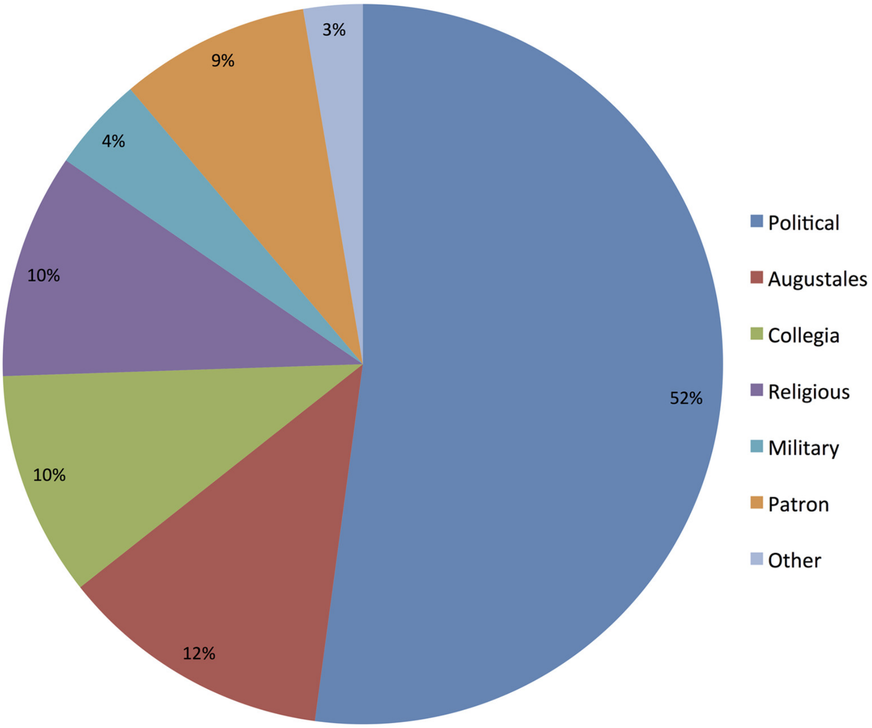

FIGURE 1 *Breakdown of benefactors named in endowment fund inscriptions by position (n = 188)*

ber of benefactors stated as holding some public office to 74%. The other types of known benefactor include members of trade associations (*collegia*) (10% of the total), people listed as patrons of a town or of individuals (9%), and lower-ranking military officers (4%). It should be pointed out that there was a great deal of overlap in the categories; many people held multiple offices over their lifetime, political, religious, military, etc., all of which were usually named in an individual's honorific inscription. Importantly, the same holds also for the recipients of the benefactions which were sponsored by endowments.[43] In total, 42% of the named recipients of the goods paid for by the endowment funds, such as feasts, cash handouts, games, etc., were officials (54% including religious officials as well). Other beneficiaries include members of a trade association (a *collegium*) (17% of the total) and the populace of the town as a whole (16%).

43 Figure 2.

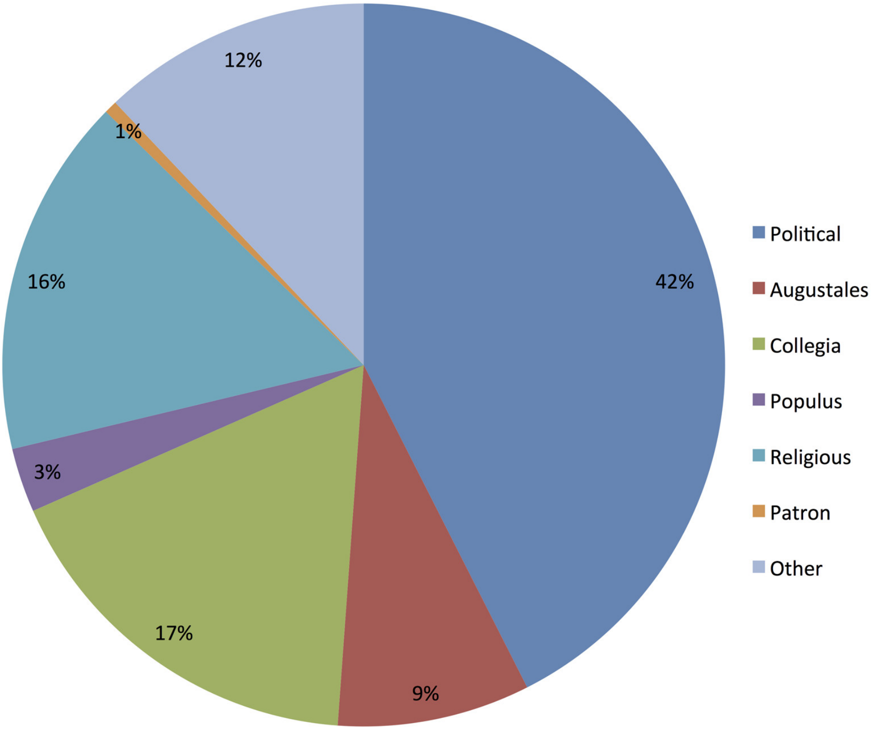

FIGURE 2 *Breakdown of named beneficiaries of endowment fund-sponsored goods by position* ($n = 174$)

What the evidence illustrates, then, is that in the majority of cases where it is known, the person choosing to establish a perpetual endowment held some public office at some point in his or her lifetime. Thus, although these benefactors were certainly acting as 'private' individuals using their own personal wealth to set up the foundations, being at some point public officials meant that they were closely tied to the public affairs of the towns and communities they were honoring with their generous donations. This evidence illustrates all of the sort of activities and preoccupations predicted by the theories mentioned above—the intense intra-elite competition over a limited number of 'prestige' positions like public office, the desire among elites to generate social capital and build networks of supporters and dependents, and the need to conform to societal expectations about honor, duty, and taking care of public well-being to justify their elevated status. This provides vital support for the notion that these were indeed the major driving forces behind the activity of Rome's wealthy citizens that we do see. It further underscores the overlap between private and public interests involved in urban growth and marketization throughout the western Empire, a critical topic I return to later.

Examining who the individuals named in endowment funds were, both the benefactor and the beneficiaries, also helps us place this peculiar sub-group of benefactions in its wider context. For although benefactions flowing from perpetual foundations are different in certain ways from one-off gifts and they represent perhaps our clearest lens into the functioning of Roman financial systems, they were only one of a myriad of ways that elite Romans in provincial towns throughout the western Empire exhibited their prosociality. One-off benefactions, as we saw, involved the exact same sorts of goods and services that were funded by endowment funds, such as feasts given for various members of the community, cash handouts, and entertainment like gladiatorial contests and theatrical shows. The main distinction is that many one-time benefactions involved the sponsorship of an urban building project like the construction or repair of arches, bridges, bathhouses, temples, and statues, which was not a feature of the benefactions supported by endowment funds. It is noteworthy too that often multiple acts of charity are mentioned together in these honorific inscriptions, including the combination of endowment funds and one-off benefactions, revealing that these were all part of the same, larger spending program. Take, for example, an honorific decree found at Rome from the Italian town of Ostia Antica, just West of the city of Rome.[44] Here, a prominent local magistrate was honored by the town councilors for his benefactions, including having put on theatrical a performance with his own money during his service. Furthermore, the man left in his will a sizeable (5,000 *sestertii*) endowment with the town, for the interest to fund yearly gifts of money to town notables. Many similar examples from throughout the Latin-speaking Mediterranean could be adduced as well.

Moreover, it is important to bear in mind that the distinction between the 'private' individuals who set up perpetual foundations from the 'public' officials who managed the funds is largely artificial. As we see here, in many cases these were the same people; typically, it was high-ranking political and religious magistrates who established perpetual endowments, the same class that made up the magistrates who had control over the funds. Crucially, this same group of wealthy, upper class, politically active Romans were also the main owners of agriculturally productive land as well as of urban property, including productive facilities. Thus, the wealth that circulated between benefactor, town, and investor would have involved the same set of elite residents in a given community. Put simply, the capital created with these endowments circulated not in the sort of anonymous credit markets that we are familiar with in the mod-

44 Appendix 1 #102.

ern world, but existed in an economy embedded in Rome's particular social, institutional structure. This was a world where friendships and networks of relationships between members of the same class trumped purely economic considerations. It is easy to overlook how interconnected the social, political, and economic interests of the actual people involved in the day-today affairs of a typical Roman town would have been, whether one is interested in civic politics, regional economic activity, class and social hierarchies and interactions, etc. These overlapping interests, though, are one of the defining features of the imperial Roman economy. That is why it is so critical to try to assess how these interests actually were formed and what outlets there were for the individuals who lived in these towns and cities to meet their varied and convoluted needs. This is a topic I return to again and again.

3.3 *What Sort of Capital was Used in Perpetual Endowments?*

The next fundamental question about these endowments that needs to be addressed is what type of wealth formed the basis with which the foundations operated? The seminal scholar on these funds noted quite simply in 1914 that foundation assets were of two kinds: land and money.[45] The typical approach taken towards Roman foundations, though, has been to focus almost exclusively on endowments based on land.[46] As we have now seen, however, the Roman economy was not exclusively agrarian, even if agriculture was the most important single aspect. Given this, it is pertinent to reassess the evidence for perpetual endowments to see what it can tell us about how Rome's monetary economy functioned.

The typical procedure for establishing a perpetual endowment was, essentially, as follows: a local man (or, though less often, woman), typically one who has held a number of administrative, military, and religious offices throughout his life, celebrates an honor such as his appointment to the town council or a child's election to an office by donating money to his town's treasury to be invested or lent out at interest, so that the yearly returns will fund a feast, a cash-handout, or some public entertainment on that day in his honor in perpetuity. What, then, were the common ways that endowments were created? Certainly, both money and land endowments are known, as Laum noted. But as more and more evidence comes to light, it is becoming increasingly clear that, as Roman historian Jinyu Liu recently noted, the "majority of endowments were

45 Laum 1914, 133.
46 E.g. Saller 1982; Kehoe 1997; Burton 2004.

cash endowments."[47] Liu's assessment is surely correct, though the phrasing is a bit misleading, for what we actually have evidence for are *money* endowments, which is not the same thing as cash; 'money' here includes physical coinage and, more importantly, notional money and credit. Let us look more closely at what the evidence reveals.

In many of the surviving endowment inscriptions, it is explicitly stated that the goods which the benefactor wanted to be provided each year were to be paid for by interest generated from the principal, using the phrase *ex usuris*, 'from the interest on/out of.' The alternative to the *ex usuris* type is the *ex reditu* type, meaning 'from the return on/out of', a very similar but more ambiguous formula. Importantly, most of the inscriptions that explicitly mark what the principal is designate a particular sum of money, as opposed to a tract of land.[48] In all, of the 158 inscriptions which refer to perpetual endowments that I have collected, 97 (61%) are of the *ex usuris* ('from the interest on') type, which definitely refer to money being used as the principal with which the foundation was meant to operate, as Table 1 illustrates.[49] There are an additional six which use both the terms *usuris* (interest) and *reditu* (return). It is likewise clear in these cases that the *reditu* simply serves to further emphasize the nature of using money to generate interest, in other words that it is a *reditus*, a return, on the investment of that money. The combined types, thus, also refer specifically to the use of money in the establishment of a perpetual foundation, meaning that, in total, 103 (65%) of all endowment inscriptions involve clearly money principals.

This is not to suggest that money was the *only* possible principal used to create an endowment. Indeed, there are a handful of inscriptions which unambiguously refer to the use of land as the principal with which a perpetual foundation is established, using the 'from the return on' formulation to denote a general return, here on the production from some piece of property. In total, 66 (42%) of the 158 endowment inscriptions use the phrase *ex reditu* ('from the return on'), although of these I identify only 15 (9% of the total) which explicitly refer to land being used as the principal of a foundation rather than money. Moreover, of these 15, two-thirds (10) come from Italy, which is slightly higher than the rate of the total number of endowment inscriptions which were found in Italy, namely 100 of the 158 (63%). Perhaps, then, the use of land in endowments was largely a regional peculiarity. Even if it is merely the prod-

47 Liu 2008, 233. Cf. D. Johnston 1985.

48 A good example of this formulation is Appendix 1 #2.

49 See the Appendix for a complete breakdown of these inscriptions by type.

uct of chance survival that most of the land-based endowment inscriptions come from Italy, however, it is nevertheless unmistakable from the evidence presented here that an overwhelming majority[50] of the inscriptions for which the type of principal can be ascertained with a high degree of certainty name money rather than land, in spite of Pliny's reservations about the practice, as I detailed above.

What we can conclude, then, is that money was the typical principal used in endowment funds. Perhaps more importantly, we also have here some of the clearest indication for the generation and circulation of *credit*. Endowment funds were lent out or invested with a greater sum being returned, generating money from money in order to keep the fund active while also purchasing the goods and services that formed the benefaction the fund was designed to produce. Money was given—to some person as a loan, to some enterprise as an investment, to purchase some property as a different type of investment—and returned, at a later time, plus interest. Repayment is deferred until after the sum is given and can be put to use. This is text-book credit generation.[51] Moreover, the initial principal used to establish the fund could have been land, or large sacks of physical coins, but was also most likely simply a debt obligation, essentially a promise to back up the amount given with coins, property, or some valuable item *if needed*; i.e. credit again. Admittedly, the evidence itself is silent on this issue specifically, but the most plausible scenario for how a wealthy Roman would 'give' a large endowment to a town or other organization is simply to state that he wished to do so, vouching for his ability to back up the debt with cash or perhaps offering a security such as property. In other words, here we have another small piece of evidence that supports—or at the very least fails to contradict—a basic model of the Roman economy in which credit circulation played a significant role in certain types of elite activity and the financial economy more generally. Crucially, the entire system only functions at all on the back of an already fairly well-developed financial economy: it works only if the basic notion of deferred payment creating a debt obligation (credit) is accepted, if the capacity for large-scale transactions like setting up a foundation is supported by a system of monetary exchange, and if there are opportunities to loan and invest money at interest to begin with.

50 Namely, the 103 *ex usuris* or combined *usuris/reditu* inscriptions which record cash endowments balanced against the 15 which denote land grants 65:9 %.

51 As in, for instance, Schumpeter 2006 [1954]. Cf. Harris 2008.

3.4 *Where Did the Endowment Money Go?*

This leads directly into the final key question about these endowment funds, which links the practice back up to the wider local and provincial economies in which they operated. It is clear that money was involved in a significant number of these endowment funds and that it is, thus, safe to conclude that this was the normal practice. This, though, raises a fundamental issue: how was the principal used to establish perpetual endowments actually employed in order to generate the interest used, ultimately, to provide the benefactions specified by the terms of the endowment fund? I outlined above what we can ascertain about how these endowment funds were administered; endowments were established with provincial towns and placed under the management of the town's chief magistrates, whether the fund was included as part of a town's common funds, as seems most likely, or kept separate from other public money. As mentioned, none of the evidence concerning these endowments details what the town councilors or other public agents actually did with the funds once they had them. This is unfortunate, as it is absolutely crucial for understanding what role these endowments played in the communities where they existed. While it is impossible to ascertain with any certainty how any individual fund was actually used, by exploring archaeological and material evidence it is possible to enumerate and test some of the possible opportunities available to invest the fund.

Perhaps the most important use for the money in such funds was indeed land.[52] Even for endowments that were established using money as the principle, it is possible that the town authorities would use that money to purchase or lease land, whether agriculturally productive land, or property with buildings on it that could then be leased or sublet with the rent being the return on the investment. This practice is in fact attested in our evidence; there are a few endowment inscriptions which refer to cash being given over to a town, but which explicitly state that the money is to be used by the town to purchase land that will draw a steady income. For instance, an honorific decree from Ariminum in northeastern Italy records a donation of 20,000 *sestertii* by a curator and patron of an association of carpenters to Ariminum "for the purchase of land" that will generate an income to support cash-handouts given every year on the benefactor's birthday.[53] The provision that money is to be used to purchase land, however, is mentioned explicitly in only two of the extant

52 For the opinion that Rome saw very little investment apart from agriculture, see notably Saller 1982, 120–126; Duncan-Jones 1990, 46–47. On investment opportunities in agriculture, though not restricted to buying and renting land, see Kehoe 1988.

53 Appendix 1 #54. Cf. Mrozek 1968, 161–162.

endowment fund inscriptions.[54] Still, this does not preclude the possibility that those in charge of a fund would use the money to purchase or lease land. The notion that land would be the sole, or even the major focus for investing an endowment fund's capital, on the other hand, is difficult to support from the available evidence. Indeed, that idea only makes sense based on a presumption that the Roman world generally lacked investment opportunities other than land and that, therefore, the only possible way that an endowment fund could operate would be through land. This, however, is certainly incorrect.

This is clarified further by another much studied letter written by Pliny the Younger, this time to the Emperor Trajan during Pliny's time as governor of the province of Bithynia in modern-day Turkey. In it, the governor asks the Emperor what to do with a surplus of public money accumulated by some of the cities in his province.[55] Pliny identifies the problem as two-fold; first, he says there is no available land that could be bought with the money, and secondly he cannot find any people "who wish to borrow from the town's treasury, especially at 12 % interest, when they can raise [money] from private creditors." Pliny then recommends that the money be let out at a sub-prime rate, namely for less than the 12 % interest that was the going market rate,[56] or alternatively that certain magistrates be forced to take loans against their wishes. Trajan responds that lending the money at a lower interest rate is preferable and advises against any forcible lending.[57] Pliny's letter demonstrates that not only were there private creditors willing to lend money to people living in Bithynia, but that the state representatives were ready to lend out the public money which had accumulated. Remember, such public lending is also attested in the town charter from Irni, which authorizes a *quorum* of councilors to loan public money at interest. Similarly, there are several statutes in the legal writings compiled under Justinian that deal with the loaning of public funds, typically revolving around the issuing of sureties and penalties for becoming insolvent when holding a public debt.[58] Surely, this type of public lending would have been one of the major outlets for the investment of endowment funds throughout the Empire.

Some of the endowment fund inscriptions, in fact, provide direct confirmation of this. Consider an honorific inscription decree from the small town of

54 Appendix 1 #54 and #80.

55 *Epistles* 10.54.

56 This is on the higher range, as the normal rates of return that could be expected from a loan seem to have been either 6 % or 12 %. On this, see notably Liu 2008; Bransbourg 2012.

57 *Epistles* 10.55.

58 For instance, *Codex Justinianus* 10.6–8, 11.32.

Gor in northern Tunisia (Africa Proconsularis).[59] This inscription records the gift of a sum of money, specifically 4,000 *sestertii*, given to the municipality to fund an annual boxing match, put on a feast, and provide for a distribution of oil or other supplies for the bathhouses from the interest generated on the 4,000 *sestertii* principal. The benefactor here, moreover, specifies that 60 *denarii* were to be generated from this capital and used for the benefactions. Taking the conversion rate of one *denarius* to 4 *sestertii*,[60] this is the equivalent of 240 *sestertii*, which represents exactly 6 % of the 4,000 *sestertii* principal. There are only 15 inscriptions which allow a reconstruction of the rate of return expected from the investment of an endowment, of which nine are either a 5 or 6 % return, with two examples of a 12 % rate, one of 15 %, and the other three less than 4 %. Together, they demonstrate the that the practice of generating interest from a monetary principle was indeed known to fund managers. Nor do the instances where the interest to be collected is left unspecified contradict this assessment; they simply leave the matter ambiguous, suggesting that in many cases fund managers sought as much return on loans and investments as they could get, with the only requirement being, as discussed above, that some portion of that return be spent on the prescribed benefactions in order to satisfy the benefactor's trust.

Why, though, would a Roman take out a loan at interest? Pliny's letters deal only with the supply side, in other words he is simply looking for ways to use surplus capital to generate further income.[61] The demand side of this process is an entirely different story. As I have argued repeatedly, the evidence from the perpetual endowment funds very clearly support the notion that financial instruments such as creating and circulating investment capital and credit indeed played a fairly significant role in the Roman world. In part, the credit that circulated in the Roman economy was generated through loans used by individual Romans, often wealthy ones, looking to furnish their lavish spending on personal luxuries, or to finance the benefactions they made to their communities for the social and political purposes discussed above.[62] Indeed, as I note throughout this work, elite Romans had many obligations in order to maintain

59 Appendix 1 #2.

60 This is the ratio established by Augustus' reforms in 23 BCE which remained intact until the monetary problems that plagued much of the Empire beginning in the middle of the third century.

61 For discussions of the importance of supply-side credit and investment in the Roman financial system, see notably Andreau 1994; Kehoe 2013.

62 Verboven 2002 offers an important account of the prevalence of loans among Rome's elite for the purposes of conspicuous spending to increase their social profile.

their standing that required a great expenditure of capital, from buying luxurious residences, maintaining a household of slaves and other dependents, holding extravagant parties for peers, and of course performing benefactions. Given that much of their wealth would be tied to land, wealthy Romans would often find their liquid assets insufficient to meet these obligations, so they would require loans of this kind. This has been the focus of many previous studies into the uses of Roman credit.

Critically, credit must also have been used for making investments into productive areas. This is indeed a central aspect of the entire way that perpetual endowments functioned, for the profits generated by such productive investment would supply the debtor with the money needed to repay the loan, for instance to an endowment fund manager, thereby keeping the system intact. Conversely, loans taken out for purposes of consumption need to be repaid, with interest, by cutting into pre-existing wealth, which, in the case of an endowment, threatens its principle of perpetuity. Put simply, investment-credit creates wealth, consumption-credit reduces it. And since wealth-reducing consumption-credit threatened the longevity of these ostensibly perpetual foundations, the nature of the institution of providing annual benefactions through foundations itself was structured to favor investment-credit. By encouraging and facilitating investment into productive, profit- and wealth-generating activity, then, perpetual endowments had a beneficial effect on the functioning and overall output of the Roman economy. Moreover, in this respect the managers of these funds were acting in the role of financial intermediaries by gathering capital and seeking ought capital-hungry sectors of the economy in which to invest. This again underscores why these endowment funds are such an interesting and important source of evidence for the Roman economy. In the next chapter, I follow up on this discussion and survey the various investment opportunities available to wealthy Romans as well as those in charge of communal money, including managers of perpetual endowments, focusing on the underappreciated demand side of the Roman economy.

One other insight about these funds deserves mention here, though it is a highly speculative one. Namely, that the investment-credit created by endowment funds established with some provincial town, by being couched under the auspices of a benefaction, obscured the nature and scope of the economic transactions involved. In other words, it is possible that the money and valuable property which circulated through the management of these funds provided a means for wealthy Romans to circumvent legal and social restrictions on risky investments into non-agrarian activities. Indeed, a long-held assumption of economic historians is that elite Romans, particularly those in the Senatorial class, were opposed to and restricted from speculative economic activity

on both legal and cultural grounds; really, that they spurned investing in anything other than property.[63] This notion has been losing steam in recent years, though it remains clear that the Romans in the upper echelon of the social hierarchy avoided direct and explicit engagement with the 'dirty' business of making money. A potential side-benefit for elite Romans in setting up a perpetual endowment, then, could have been to ensure that their financial and business interests were supported by the creation of investment capital and that their social status was maintained by the clandestine way that this capital circulated. At the same time they could acquire social capital and prestige for the generosity of their public largess.

The officials responsible for administering these funds were of the same class (understood broadly as people with similar wealth, political participation, and social prestige) and had similar interests as the typical people who set up such foundations; they thus would likely have known the sort of investments that the benefactor favored, and perhaps the benefactor or his heirs would often have directed how he wanted the fund to be invested. It is highly plausible, in fact, though unfortunately impossible to demonstrate conclusively with available evidence, that the fund would be invested in a business owned by the benefactor himself or one of his dependents, such as a freedman or client. Through the creation and provision of credit and investments that these endowment funds entailed, the notionally public officials who managed the funds, as well as the heads of trade associations and similar collective groups, functioned essentially as financial intermediaries. This is a significant revelation, for financial mediation, a fundamental element of modern economies, is notoriously underdeveloped in the ancient world, at least according to a majority of scholars.[64] Of course, wealthy Romans found many ways around such restrictions. The principal methods discussed by historians were by employing dependents—freedmen, clients, and slaves—as agents to perform the taboo activity on their behalf. The capital resources that originated from a town's public funds, especially when couched in the world of civic benefaction, seem to

63 See Verboven 2008 for an interesting, recent discussion of the affect that this social aversion had on Roman financial activities.

64 Professional bankers are certainly attested in the Roman world, although there is much debate over exactly how great their impact was on Rome's financial development, particularly in terms of generating credit through taking and lending deposits. There also existed 'professional' money-lenders, known as *faeneratores* or *negotiatores* who lent out money at interest, normally freedmen or slaves of wealthy Romans eager to distance themselves from the socially unacceptable practice seen below. On this, see notably Andreau 1999; Temin 2004; Verboven 2008.

have formed another useful avenue for wealthy Romans to bypass some of these restrictive social norms while furnishing the resources they required for their personal and business needs. In the following chapter, I develop this idea a bit further when treating the possible investment opportunities that the opportunistic, if not 'sneaky', Roman entrepreneurs and others would have found.

4 What Lies under the Epiphenomena?

Much of this chapter indulges, out of necessity, in speculation about the ways that endowment funds were managed and used. What is certain is that perpetual endowments needed to be invested in one way or another in order to furnish an annual return that could support the benefactions which the funds were established to provide. Whether the fund was comprised of land, of cash which was used to purchase land or buildings that were subsequently rented out, or money loaned directly to individuals for their own use, the wealth provided by the endowments would eventually have made its way into the economy through some channel.

One important consideration worth repeating is that only 158 inscriptions which clearly outline the creation of a perpetual endowment are known from the western half of the Roman Empire. This is a very small proportion not only of the total number of inscriptions known from the Roman world, but even of the inscriptions which concern some aspect of the Empire's economy. This leaves open the possibility that such endowments were actually of only minor importance. These numbers, however, represent only the extant inscriptions. It is impossible to reconstruct with any degree of precision the extent to which the surviving endowment inscriptions represent the total number that were actually produced in antiquity, let alone to determine how many endowments would have been established but not recorded epigraphically. Thus, the apparent rarity of inscriptions which refer to perpetual endowments may be misleading.

This ostensibly makes it seem like no useful conclusions about the functioning of the imperial Roman economy can be made from such a small body of material. Yet, if we take a more holistic overview of the evidence and systematically explore various alternative hypotheses about how the economy could have functioned tested against the available evidence, we can indeed learn some valuable lessons from this admittedly sparse body of evidence. Put simply, the endowment fund inscriptions give vital support to a model of fairly advanced Roman financial and monetary development. When all of the material is brought together and explored from a variety of different viewpoints, it

becomes clear that there *must* have been active credit markets and avenues for productive investment in operation throughout the Roman world in order for endowment funds to operate at all; the epigraphic evidence we possess concerning these elite-sponsored funds must, then, represent one small, although certainly the most visible, portion of Roman credit activity. To reiterate what has been said above, these funds are epiphenomenal of what must have been a wide, far-reaching, sophisticated monetary economy operating largely out of sight of both the textual as well as the material record from antiquity.

One of the main reasons this realization is so important is that once the model of a fairly active system of credit, investment capital, and general financial mediation is accepted, it is possible then to gain further clarity also about other aspects of the imperial economy which, by themselves, present a fairly ambiguous picture. For instance, one-off acts of benefaction are, as mentioned, a much more common element in the epigraphic record, though they notably present a fairly convoluted picture to the Roman historian. Indeed, it has long been debated whether such benefactions were economically motivated or at least involved economic activity, or whether they should be viewed solely as a social or political phenomenon that had no impact beyond these spheres. Importantly, however, all evidence for the way that these one-off benefactions functioned fits within the overall system in which endowment funds operated. Their operation and management can, thus, plausibly be reconstructed by analogy to perpetual endowments. This surely represents a significant advance in our understanding of how the full range of elite Roman activity, including acts of civic benefaction, impacted any particular region's economic functioning, a topic which has never been fully elucidated. Moreover, the money provided by benefactions of all kinds represent only the tip of the iceberg in terms of capital flow in the Roman world. We need to recognize that a significant amount of the urban growth, industrial productivity, and trade known to have occurred throughout the Empire may have been spurred and supported by fairly sophisticated systems of credit and investment flows.

We can trace out the implications of this elite activity even further. Every type of benefaction discussed here involved tapping into the wider, underlying economic base of the local areas where they were performed. This base, in order for these benefactions to have functioned, *must* have involved a well-developed market system. Take, for instance, when an elite Roman sponsored a feast for some group in his community, a very common form of benefaction.[65] Holding such a feast generated some demand for foodstuffs, likely produced in

65 Hoyer 2013b.

the hinterland or perhaps in market gardens in the cities themselves.[66] Other goods were required by different benefactions, such as building materials and the labor that went into producing statues, bathhouses, and any other patron-sponsored building effort. Importantly, all of this demand, in turn, would have helped to spur additional market development in order to meet the demand and further facilitate the exchange of goods produced in the surrounding countryside to consumers in the area's cities and towns. This, of course, existed on top of the demand created by urban residents simply from their everyday needs, including notably the municipal elite who sponsored and received celebratory feasts as well as urban craftsmen, some of whom were likewise wealthy and participated in sponsoring and receiving feasts, who would have required food whenever they spent time in the cities. This link between urban life, market development, and prosocial activity like elite benefaction may even go a long way towards explaining the fact that fewer inscriptions detailing benefaction have been found in the less densely urbanized provinces outside of Italy and Africa Proconsularis as noted above.

Furthermore, endowment funds help to illuminate for the modern scholar the convoluted relationship between public and private interests in the Roman world, in terms of political, social, and economic matters. For, although there were clear formal, legal differences between the activities and responsibilities of private individuals compared with public organisms like a municipality, the murky regulations surrounding the management of perpetual endowments reveal how, in reality, these distinctions quickly faded as the social and economic elite of a community were the same class from which the political agents of that community were drawn. Indeed, the issue of public-private activity in the ancient world in general, let alone the Roman economy, is a highly fraught one.[67] As I argue here, it seems that wealthy, *private* individuals had the ability

66 Conceivably, produce could have simply been transported from a wealthy landowner's estate to the city for such feasts, rather than through any market mechanism. However, this hypothesis does not stand up to scrutiny from the empirical evidence. As I detail in this and the following chapters, the use of money to establish perpetual endowments indicates that the benefactions sponsored by such funds were facilitated through market means, otherwise money would not enter the picture. This method is also the most likely way that one-off benefactions like feasts were handled, a hypothesis which is not contradicted by the evidence. Furthermore, non-market means cannot explain the way that other elite-sponsored benefactions, such as public buildings, were managed, for no one would suggest that all of the limestone, marble, and other material needed to create a temple was produced on the benefactor's estate.

67 See, for instance, interesting discussions in Wallace-Hadrill 1994 and Donahue 2004.

to use *public* endowments as a means of side-stepping Roman social and legal restrictions on the flow of capital and risky investments into urban construction or manufacturing. This becomes especially important, for instance, when tracing the dynamics of Roman political and administrative life; the bureaucratization that the Empire underwent in the third and fourth centuries fits into an overall picture of the decline and ultimate failure of Roman social customs in promoting this sort of civic, public responsibility among notionally 'private' citizens. It also represents a sharp contrast between Rome's socio-political economy and other pre-industrial states, such as early imperial China, where such business activity by leading public figures was more tightly regulated;[68] or early modern Europe, where most states gave great leeway to individuals to pursue economic interests, but without the overlapping activity in the public sphere.[69] In fact, Roman society and public duty in this regard more closely resembles some of the Medieval Caliphates, for instance the Mamluk Sultanate in the 15th century CE where the Mamluk ruling class were "patrons of art, schools, and mosques; builders of roads, bridges, and markets; and overseers of 'public works', morality, and charity."[70] I develop these thoughts concerning the overlap of public and private duty further in Chapter 4.

It should by now be apparent that the people involved in every aspect of benefactions were in the main colleagues and associates from the same elite social stratum, helping to cement social networks and thereby lower transaction costs and support economic development on a broad level. This is a crucial although often overlooked aspect of endowments and other forms of benefaction, one that provides clarity on the lax regulatory environment in which fund managers were able to operate; the lack of oversight allowed wealthy Romans to use the funds provided by endowments together with other supposedly 'public' resources as a source of capital to be used to loan out, to invest in, and to fund the enterprises of their fellow elite. This willingness on the part of the central imperial authorities to permit local magistrates to act with little central control was perhaps, then, by design. Contrarily, it may have been simply the by-product of a thriving and well-developed capital market which operated without a great deal of legal regulation. The activity of local elites which I outline in this chapter was merely one small part of this market, the epiphenomena revealing the complex, interconnected set of economic activity that had developed underneath the surface.

68 See for instance Lewis 2006; Steinhardt 2013; Lewis 2015 on the regulations on urban markets in early imperial China.

69 McCormick 2001.

70 Dols 1977, 153. Cf. Lapidus 1984, 2002.

CHAPTER 3

Investing in the Roman Economy: Material Evidence for Economic Development

In the last chapter, I detailed the way that perpetual endowments, a peculiar type of benefaction provided by elite Romans in many parts of the Empire, seem to have operated. I discussed how these perpetual endowments really belong with other, simpler, one-off acts of charity in terms of their social and political motivations, and that all benefactions had a similar economic effect. I argue that the primary significance of the perpetual endowments is that they betray how the Empire featured a fairly well-functioning and robust financial system. This includes the creation and circulation of credit that reached beyond just the upper echelons of the Roman social hierarchy and their need for capital to support 'conspicuous consumption', but impacted also those looking for productive investments that would turn the credit into interest-generating loans. Although it is doubtful still that the poor, lower class Romans had significant access to such credit, it does seem quite plausible that a substantial amount of *investment* capital was created and circulated throughout the imperial economy.[1] This chapter expands upon that discussion, surveying some of the evidence for what sort of investment opportunities were available to Romans with the money to spend, including wealthy entrepreneurs from the equestrian class, for instance, or the managers of common pools of money like city councilors and those in charge of endowment funds. By explicating some of the possible scenarios for how all of this activity could be interconnected and reasoning through what sort of evidentiary traces they might leave, it is possible reach some insights into the function and nature of investment in the imperial economy.

At the start of this chapter, I explore the different avenues where people with some money for investing—such as those officials in charge of a perpetual foundation—would have been able to put that money to good use. I begin with endowment funds again here because, as I stated previously, this body of material offers the clearest evidence available for understanding financial

1 It is notable that even Harris 2006, one of the most ardent proponents of the view that credit was an important part of the Roman financial economy, nevertheless confines his arguments to the circulation of credit among Rome's elite as a way to support lavish consumption habits.

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and market development in the imperial period. I then explore how all of the evidence about elite spending on benefactions fits with other types of evidence from the western Mediterranean, namely archaeological work, ceramic and numismatic evidence, and other such material. Finally, I turn my focus to the impact that this activity would have had on overall market development of the Empire, testing whether the material remains support this conception or indicate another type of economic structure.

1 Benefactions as Wealth Generators

There are a few considerations to be borne in mind when treating the overall economic impact of perpetual endowments. Firstly, a key aspect of perpetual endowments is that they were, or at least were intended to be, *perpetual*. This means that the principal used to establish the funds was, in essence, consumed year after year, since it was being annually invested and returned with interest in order to be reinvested the following year. In order to properly assess the impact of the funds, then, each individual inscription recording the establishment of a perpetual endowment would have to be multiplied by the number of years the fund lasted, since it is as though the fund was re-established year after year. Unfortunately, it is impossible to get even a rough idea of how long funds actually lasted before they were abandoned or failed for whatever reason.[2] Still, it means that, even though endowment inscriptions are relatively rare compared to other types of epigraphic material, their actual impact was far greater than their mere numbers would suggest. This underscores the discussion in Chapter 2 about the significance of this fascinating body of material.

The second important consideration to be made concerns the size of the foundations. The amount of money involved with these perpetual endowments is certainly not staggering, but it is substantial. In total, the average value in *sestertii* of endowments where the principal is expressed in money terms is

2 There are some hints in the epigraphic record that these funds could last for hundreds of years. For example, a well-known foundation set up in Asia Minor in the mid-second century CE to put on a certain civic festival is recorded as having delivered this entertainment in the year 260 CE, over a century after the fund was established (Wörrle 1988; French 1994; Zuiderhoek 2009). This kind of clear record, however, is exceedingly rare in the available evidence. It is also somewhat striking that the last instance of this festival we know of was in the mid-third century, a turbulent time when many foundations seem to have failed throughout the Empire; an important point I return to in Chapter 6.

152,598 *sestertii*, with a median sum a somewhat modest 20,000.[3] There were, of course, some very large endowments, such as those used in alimentary schemes like one established in Sicca Veneria in western Tunisia for 1.3 million *sestertii*.[4] But the million-plus *sestertii* foundations were certainly the exception rather than the rule. Still, 20,000 *sestertii* was not a negligible sum either. While such an expenditure could be easily borne by Rome's wealthiest citizens, especially those of the senatorial class who had property valued in excess of one million *sestertii*, these sums would nevertheless have carried a considerable purchasing power.[5] 15–20 thousand *sestertii*, for instance, could support the yearly salaries of 10–20 legionary soldiers.[6] It is important to remember too that the interest from these sums, typically at a rate of 6 or 12 % (generating a return of 1,200 to 2,400 *sestertii*), was able to support a number of benefactions, including holding games for an entire community's population, providing lavish feasts for certain important officials, buying oil or other goods to distribute for use at baths, etc. As discussed previously, one of the main reasons why a benefactor chose to supply these goods was for the social and political prestige resulting from the conspicuous, generous outpouring of 'generosity' involved in public benefactions. This implies, then, that the sort of goods furnished by endowments were considered sizeable and important enough to give prestige to the benefactor, which in turn suggests that the sums used to provide these goods were likewise significant.

Thirdly, it must be remembered that the capital supplied by endowments went often into the public coffers of a town and seems to have been pooled in some way, perhaps with some restrictions, with other public or semi-public money, as I detail in the previous chapter. This is important, because it means that when the chief magistrates of a town in the western Empire went to invest money from an endowment, they were able to invest at the same time public money from other sources, meaning that any investment or loan made by a town was not limited to the size of any individual foundation. Such 'bulk'

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3 See Tables 2 and 3.

4 Appendix 1 #10.

5 For the size of an elite Roman's wealth, see notably Duncan-Jones 1982. For an interesting discussion of the small size of public benefactions relative to the large size of private fortunes, see Zuiderhoek 2009. The crucial question, though, is not what impact public benefactions had on the benefactors' wealth, which is the focus of Zuiderhoek's account, but rather on the importance of such spending for the beneficiaries.

6 A soldier received around 900 *sestertii* per year until the late second century CE when it was increased to 1,200 *sestertii*, and was then increased again twice during the early third century to 1,600 then 2,400.

TABLE 2 *Average size of endowments in the western Empire in* sestertii

Region	*Ex usuris* (interest)	*Ex reditu* (return)	*Ex usuris & ex reditu*	Combined
Italy	111,029	242,692	170,000	**165,577**
Africa	224,539	95,333	4,000	**172,130**
Gaul	73,375	N/A	N/A	**73,375**
Spain	211,666	N/A	N/A	**211,666**
Germany	3,666	60,000	N/A	**17,750**
Sicily	N/A	N/A	N/A	N/A
Combined	**131,372**	**210,363**	**128,500**	**156,568**

TABLE 3 *Median size of endowments in the western Empire in* sestertii

Region	*Ex usuris* (interest)	*Ex reditu* (return)	*Ex usuris & ex reditu*	Combined
Italy	8,000	30,000	50,000	**10,000**
Africa	31,000	62,500	4,000	**25,000**
Gaul	25,000	N/A	N/A	**25,000**
Spain	95,000	N/A	N/A	**95,000**
Germany	4,000	60,000	N/A	**4,000**
Sicily	N/A	N/A	N/A	N/A
Combined	**10,000**	**30,000**	**35,000**	**20,000**

investing would allow a town to reap the rewards from economies of scale by supplying a Roman entrepreneur with the means to produce some good on a large-scale, whether through a money loan which was used to invest into a business or by direct investment.

The crucial point to all of this is simply that even though perpetual endowments may have been somewhat rare occurrences throughout the Roman imperial period and although most individual foundations could not support a large-scale construction or business venture alone, endowments formed only one part of the public wealth held by towns throughout the Roman world that was available for investing. Additionally, as I explained in the last chapter when exploring the legal restrictions on endowment funds, there appears to have been surprisingly little oversight or direct regulation regarding how pub-

lic funds, including money from these endowments, were actually managed. As public officials, the decisions of town magistrates about these funds were certainly subject to some scrutiny.[7] Still, it is clear that the important decisions were in the hands of the elite, who could do with the town's finances more or less whatever they chose so long as they had agreement among themselves. The particulars about what decisions were made, who was involved, and who exactly benefited were largely kept away from the public eye, with only the broad outcomes—like who sponsored a festival or who was invited to a feast—being exposed. On the other hand, after a decision was reached, there were legal protections in place to ensure that the terms of the deal were kept. Once the town, namely the chief magistrates, agreed to accept an endowment, then a trust was made holding all parties legally liable for the terms of the trust. It is possible that a testator's heir could sue the town to recover the endowment if it was thought the magistrates were not spending enough on the benefactions and so were not honoring the testator's wishes, but in general these officials had a fair amount of freedom to decide what to spend. Even in cases where the amount that had to be spent was specified by the benefactor who established the endowment, the amount was always given as a set sum of money to be used for the various benefactions; nowhere in any of our surviving evidence is there a clear stipulation that the town had to invest the endowment separately, or keep track of exactly how much interest was collected on the principal and use the entire sum collected on the benefaction.

In other words, it was always possible for the magistrates to collect more from the interest on an investment made with an endowment's funds, along with whatever other money was used for the same investment, than the amount needed for the benefactions stipulated by the endowment trust. The extra money would, then, be profit accrued to the city itself, presumably to

7 It is worth noting that Gary Rogers made the argument back in 1991 that these type of endowments had to go through detailed negotiations between benefactor and magistrates before a fund could be created, though this was in reference to a foundation established in Asia Minor in the second century CE (Rogers 1991). This type of negotiation, between members of the same local elite, does not entail a real oversight or clear regulation regarding the use and beneficiaries of 'public' funds, apart from the basic limitations on how benefactions were received by a town and legal protections ensuring the proper use of the funds as I explain above (cf. D. Johnston 1985). Others have, in fact, viewed this same foundation in Asia Minor as evidence for the tight, 'oligarchic' control exerted by local elite in the East over civic finances (Wörrle 1988; Mitchell 1993). Indeed, the rarity of explicit evidence for public accounting or recording of the decisions undertaken by town officials regarding accepting and managing donations just underscores the leeway that powerful, wealthy, politically active elite in towns across the Empire had in disposing of capital.

form part of the town's common, public funds. Indeed, the desire to keep such a potential windfall profit for himself, rather than turn it over to the public authorities, seems to have been one of the main motivations behind the peculiar but well-known arrangement Pliny made with the town of Comum in northern Italy.[8] This also meant, of course, that the town would similarly suffer a loss from a return on an investment less than what was needed to provide the required benefactions, meaning that the magistrates would have to use part of the fund's principal, other portions of the town's public funds, or simply cease to provide the benefactions. Indeed, this is likely the main reason that most of these endowments, although they were meant to last in perpetuity, ultimately failed. Furthermore, the great deal of leeway that foundation managers had in the disposal of the funds is likewise important for understanding the activities of magistrates and the relationship between public and private interests in the Roman world, since most endowments that we know of were established with a Roman municipality.

In this way, the funds made available to a town treasury through benefactions along with other sources of funds played an important role in keeping municipalities throughout the Roman world solvent and in helping them discharge their public duties, including maintaining public buildings, roads, and other infrastructure, for as long as the principal remained intact.[9] This is a key, yet often overlooked, element in the finances of towns in the Roman Empire. Equally as important, this capital flow, including—though certainly not limited to—money provided through endowments, must have encouraged investment in a variety of areas;[10] this investment, in turn, would have supported growth in economic productivity in several ways. This includes agricultural production, which could have benefited from investment into *landesque* capital,[11] as well as

8 See the previous chapter for a discussion of Pliny's unique scheme.

9 More on this issue in Chapter 4, where I point out that these duties were, in fact, not particularly vast. Still, municipalities certainly did have some responsibilities towards maintaining public infrastructure.

10 Others disagree with this assessment of the role of elite benefaction; see Zuiderhoek 2005, 174–177 for a cogent overview of the alternate argument. I detail why it is I think that this elite activity had such a meaningful impact on the overall development of the Roman economy more below.

11 This refers to permanent or semi-permanent modifications to a landscape that have lingering economic, and also often political and social, effects. Terracing of hills to increase cultivatable land or establishing sluice gates in irrigation channels to control silting are prime examples. See Kirch 1994 for a particularly clear and thorough explanation of the concept.

urban production such as ceramic or textile production. The wealth generated from investment into a region's economic output not only could be used to pay back the interest on the loan or investment, thus sustaining the endowment fund, but, more importantly, was then available the next year to be reinvested back into continuing the expansion of the region's economy, to put towards urban construction and development, or, of course, to be used for private consumption. In short, the funds made available for lending and investing by the ostensibly charitable or prosocial activity of local elite must have had a generally positive impact on the imperial economy—helping to foster and support the supply of credit in many areas of the Roman world, as well as bringing profit to the elite benefactors themselves (if not the same individual who set up a foundation, at least to his peers). Crucially, as I explain further below, much of this financial activity operated behind the scenes, out of sight from the bulk of the population and, perhaps, largely invisible to the central authorities.

2 Investment Opportunities in the Roman Economy

To discover more about the scope of possible investment opportunities, it is necessary to look outside of the endowment inscriptions and explore some of the archaeological material from the western Roman Mediterranean. Once more, we need to contrast different possible conceptions of the imperial Roman economy; either as a predominantly agrarian society featuring largely self-sufficing farmers along with some trade in staple goods, particularly the 'Mediterranean triad' of wheat, olive oil, and wine, spurred principally by the state's intrusion into the market in the form of subsidized wheat for residents of the capital, Rome;[12] or as fairly highly monetized with market-oriented trade in a wide variety of goods and services.[13]

In several prominent and compelling works published recently as part of the *Oxford Roman Economy Project* (OXREP), Andrew Wilson and others have pointed out fairly conclusively that both agricultural production and urban manufacturing expanded dramatically throughout the western Empire during the first two centuries CE.[14] This expansion was aimed at a variety of goods. It

12 The most prominent adherents of this position are Finley and, more recently, Garnsey and Saller 1987; Erdkamp 2005; Bang 2008.

13 Notable recent examples are A. Wilson 2009a; Temin 2013; Kay 2014.

14 A.K. Bowman and Wilson 2009, 2011, 2013. Another key factor in the expansion of this agricultural production, of course, is favorable climatic and environmental in many parts of the western Empire during the first two or three centuries CE, including southern

included agricultural products such as wheat and other grains, olive oil, wine, fruits and nuts; urban manufactures like textiles, dyes, fish sauce and other marine products; ceramic goods including transport vessels like *amphorae* as well as fine-wares; glass and metal objects; and also includes services such as construction labor and entertainers who may have been itinerant to some degree, but who almost certainly worked for wages, at least in the typical case.[15] Crucial here is that there was undeniably expansion in the productive capacity and the actual gross output of a wide variety of goods throughout the western Roman Empire. The question of what sort of growth this was, namely 'real' per capita growth or simply an aggregate increase that was 'eaten up' by a concomitant increase in population in a Malthusian-trap scenario, I leave aside for now (I discuss this further in Chapter 5). Let me simply stress here that the production and distribution of these goods and services on such a large scale as clearly happened could *only* have occurred as the result of massive investment of capital, labor, and other resources.

Indeed, even the production of large surpluses of wheat, wine, and olive oil—products traditionally seen as the backbone of the Roman economy—actually relied on a great deal of investment. This includes not only the devotion of agricultural land to these crops, but also the labor and time needed to process the goods into edible form, the shipping used to transport the finished product around the Mediterranean, as well as the facilities where the crops were processed. Importantly, archaeological work has identified the remains of many of these facilities. For instance, thousands of pressing facilities have been found from throughout Spain, North Africa, and elsewhere in the western Mediterranean, which were used to press olives for oil as well as for crushing grapes to make wine.[16] Even the land itself that was used to produce these valuable crops often required additional investments to facilitate production. All over the Mediterranean basin archaeological and field-survey work has revealed a great deal of investment over the course of the imperial period into *landesque* capital modifications. Fortunately, such modifications are often archaeologically traceable, including channels, aqueducts, sluice gates, retain-

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Spain, North Africa, and most of northwest Europe. I do not delve into this topic much here, as it deserves more scrutiny than space permits, plus the issue has been treated more capably by others. See notably the 2013 OXREP volume on *The Roman Agricultural Economy*, which contains several chapters describing the impact of climate and environment on different aspects of the Roman economy (A.K. Bowman and Wilson 2013).

15 On wage-labor in the Roman world generally, see Brunt 1980; Scheidel 2010; Temin 2013.

16 See for more details especially Brun 2004; Mattingly 2009.

ing walls, terraces, and simply increased density of occupied farmland, all of which feature prominently in the material remains of Roman sites throughout the Empire.

Similarly, the development of urban manufacturing required a massive outlay of capital to build up the infrastructure and supply the materials needed for production, which has, fortunately, also left significant traces in the archaeological record. Notably, ceramic goods, which were produced in staggering quantities throughout the Roman world, both as vessels to transport other goods (*amphorae*), as well as bowls, plates, jugs, lamps and other items valued in their own right.[17] Furthermore, the spinning wheels used to form the goods, the kilns used to fire the clay, the transport infrastructure used to get the goods from the site of production to the consumers, as well as the support of the people involved in this activity, again, also required a substantial and continued financial investment. Similar stories can be told with the less-discussed agricultural and manufactured products that were shipped all over the Roman world, like textiles, dyes and paints, marble and other construction materials, fish sauce, nuts, fruits, and legumes, and the list could go on.[18]

I have kept this overview of the material traces of economic expansion to a minimum, since the material has been treated capably by several scholars in previous works. I simply want to note here that there is a great deal of material evidence supporting many of the claims I am making. This is important for several reasons: firstly, it illuminates some of the chief areas of the Roman economy where investments clearly were made; and secondly, the products mentioned above represent many of Roman world's most valuable and sought after consumer goods. The significance of this latter point is that people living all over the Empire bought goods like oil, wine, and ceramics, so an investment made into producing such commodities stood a good chance of being successful. In other words, producing and selling these goods would have brought exactly the sort of returns which endowment funds required to sustain themselves year after year as intended. By no means am I suggesting that this archaeological and material evidence offers conclusive proof that an endowment fund was responsible for the development of any particular industry. Our evidence is, unfortunately, not refined enough to allow us to make that sort of claim with any security. Nevertheless, there is an undeniable correlation between the fact that endowments only functioned through investment, which attests that investment capital did indeed circulate to some degree in the Empire, and the

17 D. Peacock and Williams 1991; Peña 2007; Lewit 2011.

18 On the economic role of Roman ceramics, see particularly Tomber 1993; Poblome 2013.

material evidence from the Roman world noted here demonstrating that there were indeed investment opportunities available for entrepreneurs as well as the managers of town funds looking for just those sorts of opportunities.

3 Money in the Roman Economy: The Numismatic Evidence

One of the most important sources of material that we possess concerning the Roman economy are the hundreds and thousands of Roman coins that have been unearthed over the years in every corner of the Empire. This material offers some of the clearest evidence we have for certain aspects of Roman economic activity, including levels of monetization, trade and regional interconnectedness, and even allows us to trace periods of high inflation.[19] Ancient coinage, however, is typically perceived as the exclusive domain of specialist numismatists, meaning that too often historians fail to account for this crucial body of evidence in their treatment of the Roman economy. Without getting too bogged down in the nitty-gritty details of the coin evidence from throughout the Empire, it is worth devoting some space here to point out what this material reveals about the way money and markets operated in the Roman world, and how it fits with the other evidence presented here and in the preceding chapter.

The central, and somewhat obvious, point that needs to be made about Roman coin evidence is that there is a lot of it: hundreds of thousands, if not millions, of coins minted by the imperial authorities have been found over the years and exist in the collections of museums, universities, and private antiquities collectors all over the world. In short, the Roman world was remarkably flush with coins, especially relative to other ancient states.[20] The questions that need to be addressed, though, are why were so many coins produced over the course of the imperial period and how were they used? In other words, what can this material really tell us about the Roman economy? The story is actually a little more complicated than it may at first appear.

Traditionally, numismatists and scholars of ancient monetary history have assumed a direct link between military activity and the minting of coins throughout the ancient world; market needs or economic concerns in general are often regarded as largely foreign to the thought process of ancient

19 Burnett 1987; Harl 1996; D.W. Rathbone 1996; Duncan-Jones 1996; Bransbourg 2013; Hoyer 2013a.

20 Scheidel 2009c; von Reden 2010b; Von Reden 2012.

minting authorities. This is a very statist view of numismatic material that has dominated work on the topic, arguing in essence that the decision by an ancient polity to mint coins must have been to meet the specific needs of the polity itself. This generally meant financing public activity, which, for almost all ancient states, was primarily the cost of maintaining a large armed force. This model of coin production is certainly appealing in its simplicity, though it contains some serious issues.

For starters, exactly which coins were required by soldiers' wages in the Roman world and how precisely they received their pay have never been adequately detailed by proponents of this statist view. Notably, it is not certain that Roman soldiers were always paid with coined money, as many scholars suggest, rather than with some non-coin form of money such as credit vouchers.[21] Even if soldiers were typically paid with coin, it is unclear what denominations were used, how the coins were gathered and distributed, or whether the Roman authorities distributed coined money for other reasons as well. Solving these problems, moreover, is of fundamental importance for illuminating the economic history of the Roman Empire, for these issues relate to the level of monetization and, consequently, marketization in different parts of the Empire. More importantly, their answers can help to elucidate the function of the Roman state in facilitating market activity and its role in the imperial economy generally.

The other main problem with a model focused on state military spending is that it leaves little room for understanding how coins could have circulated without the mediation of large numbers of soldiers. Yet there is an abundance of economic activity observable in many parts of the Roman world that seems not to involve the military at all. Notably, all of Africa featured only one legion, the *legio III Augusta*, throughout the imperial period, though the region left one of the largest collections of numismatic material of any part of the Empire. Moreover, the majority of the coins found in Africa come from the provinces of Numidia and Africa Proconsularis and not in the areas of the two Mauretanian provinces where the *legio III Augusta* was based.[22] Army presence alone, then, simply cannot have been the central driving force behind the supply of coins to the region.

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21 See Verboven 2007, 250 on the idea that soldiers would buy goods at army camps using credit vouchers, though Harl 1996, Van der Vin 2002, and Morizot 2002 argue that soldiers were expected to use the coins they received as salary to purchase goods. Speidel 1992 similarly notes that deductions would be taken out of soldiers' salaries to pay for the provision of clothing and other gear.

22 The legion's main camp was moved from Numidia to near Lambaesis in Mauretania

The alternative, of course, is that coins were also produced for uses besides paying soldiers and other state functionaries. This is an extremely appealing notion, as it would actually explain a great deal more of the surviving numismatic record than the state-centric model does. But let us look at the what the traditional view is really arguing and see how it corresponds to the actual evidence. In general, the idea behind the state-centric model of coin production is that coinage in the ancient world was expensive to produce, required that large supplies of precious metals like silver and gold be stockpiled, and had to have some strong authority behind them to ensure that the coins' users trusted that they were in fact handling valuable items that could be used to attain a fair exchange in goods and services.[23] Put simply, producing coins on as large a scale as was done in the Roman world only really works when a large, powerful, wealthy, and well-organized body is in charge; namely, a state. The idea, then, is that the most appealing explanation for *why* an ancient state like the Roman Empire would expend the energy, time, and cost of producing coins on a mass scale was to meet their own needs; principally to pay soldiers, but also to meet other fiscal needs such as funds given to officials in the provinces as well as their support staff who all needed to be paid in some form, potentially with coins. Moreover, public works projects organized and paid for by state finances would have put money into the regional markets, though as I explain in Chapter 4 this actually represented a relatively minor expense for the Roman state. The main point is that this reasoning forms the basis of the statist model of coin production, though it has never been properly tested against other possible motivations for producing coins, nor does it adequately account for all of the available evidence.

In particular, it is necessary to bear in mind that the Roman world featured a robust and complex monetary system, essentially a trimetallic system featuring coinage made in gold (the *aureus*), in silver (*denarius*), and several denominations in different types and qualities of bronze (*sestertius, dupondius, as, semis, quadrans*). The normal exchange rate was 1 gold *aureus*: 4 silver *denarii*: 100

Caesariensis under Hadrian to be closer to the Aures Mountain ranges, the main area of turmoil throughout the imperial period including the revolts of the 250s CE, the heaviest fighting experienced in the region during the high imperial period. There were also auxiliary forces, many of whom were based in camps or forts in southern Numidia and Mauretania Caesariensis, although many of these military bases were constructed during the second half of the third century precisely in response to these invasions from the Aures Mountain range.

23 Lo Cascio 1996 and Bransbourg 2011 offer interesting discussions of the way that Romans viewed and treated their currency.

bronze *sesterii*, then the smaller bronzes were worth different fractions of a *sestertius*. These coins, even the bronzes, were fairly valuable, containing a relatively large amount of costly metals. A single bronze *sestertius*, for instance, was worth a good deal, certainly more than the equivalent purchasing-power of a US dollar in modern economies. It has been estimated that a reasonable cost, expressed in money terms, for a year's subsistence for an adult male in the imperial period was 200 *sestertii*, less than one *sestertius* per day, although other estimates put subsistence at no less than 1.3 *sestertii* a day.[24] To give a different perspective, a legionary soldier, one of the more stable and well-paying positions for non-elites in the Roman world, received around 900 *sestertii* per year until the late second century CE when it was increased to 1,200 *sestertii*, and was then increased again twice during the early third century to 1,600 then 2,400.

The question posed by the state-centric model of Roman coinage, then, is why bother with the bronzes, especially the fractional bronzes? What role did they play in the state furnishing its own needs by providing valuable metals to its dependents and employees? Indeed, one of the primary problems faced by ancient (and, for that matter, modern) minting authorities in general is that coins of low denominations, those minted in low-value metals like bronze, have much smaller marginal returns than higher denomination silver or gold coins, since the production costs—mining ore, smelting, shipping the metal, melting the refined metal, shaping flans, producing dies, stamping the coins, transporting them towards the final users and tracking every step of the process—are roughly equivalent regardless of the metal involved. Yet, large-denomination coins made from high-value metals provide a much greater return to the state, which bears the cost of minting, in terms of the buying power of the coins once minted.[25] This seems, in fact, to be one of the reasons that scholars have long associated minting with large-scale state expenditure, for the easiest explanation of why an ancient state would bear the cost of minting coins is to assume that high-value coins were predominantly produced and that the main motivation was to cover the expenses incurred by the ruling authorities, mainly paying soldiers and other dependents as well as rewarding loyal supporters and administrators. Surely, it is notable in this regard that the earliest coin-producing states in Asia Minor and in the

24 Duncan-Jones 1962, 64; D. Rathbone 2009, 314.

25 See Bresson 2006, 2009 for very compelling discussions of the importance of transaction costs for ancient minting practice and the relation between the cost of minting a coin and that coin's economic value in the Greek world. See also Bransbourg 2011.

Greek world concentrated on high-value metals like electrum and silver, and did not introduce low-value bronze coins until the very end of the fifth century BCE.

What this all amounts to is that the cost of the imperial army to the state was great and can definitely explain the decision to mint a good deal of coinage. And if the main motivation for the Roman state to mint coins was to pay soldiers at minimal cost and hassle, then it makes sense to have paid the soldiers in small quantities of the highest-valued currency. Yet, it would be entirely impractical for soldiers to have been paid with gold *auerii*, as they could not go to a market and buy a tunic or a loaf of bread with an *aureus*. On the other hand, to pay soldiers in small-denomination coins would not have made much sense either, for it would have been equally impractical for the state to ship literally thousands of tons of bronze *sestertii, dupondii*, etc. around the Mediterranean to meet the soldiers' needs.[26] The best solution for all parties involved, and the one that was indeed followed, was to maintain a healthy multi-denominational system that allowed for large payments to be effectively anchored to a 'gold standard' through the *aureus*,[27] have silver coins for other bulk payments, and then various levels of bronze coinage to facilitate daily transactions in the market, mid-level activity, and to act as a store of value for more modest incomes.

This view is entirely supported by the numismatic record, at least from the western Empire. The Roman world was kept well-stocked with the full range of coinage throughout the high imperial period (that is, up to the economic and financial turmoil of the mid-third century CE, which I treat in detail in Chapter 6). This includes both urban and rural areas, areas on the frontiers of northwestern Europe where the bulk of troops were stationed as well as more peaceful, under-militarized regions in North Africa and southern Spain. In all of these areas, large hoards of high-value coins along with scattered finds of well-worn, low-valued currency have been uncovered. Table 4 and Figures 3–6 show the breakdown of the denominations of coins found in the North African provinces during this period, based on my own earlier work. Africa is the perfect representative for this argument, for it was a large area, highly urbanized and economically productive, and relatively distant from the imperial mint in Rome, thus requiring a considerable cost to be supplied

26 For instance, Duncan-Jones 1998, 34 estimates 500,000 military officers received the equivalent of a legionaries pay in 200 CE, about 1,200 *sestertii* a year. This puts the annual cost at 600,000,000 *sestertii*, and since the *sestertius* contained about 25 g of bronze, this equals 15 billion grams, or over 16,500 US tons!

27 See Carrié 2003 for an interesting account of this aspect of Roman gold currency.

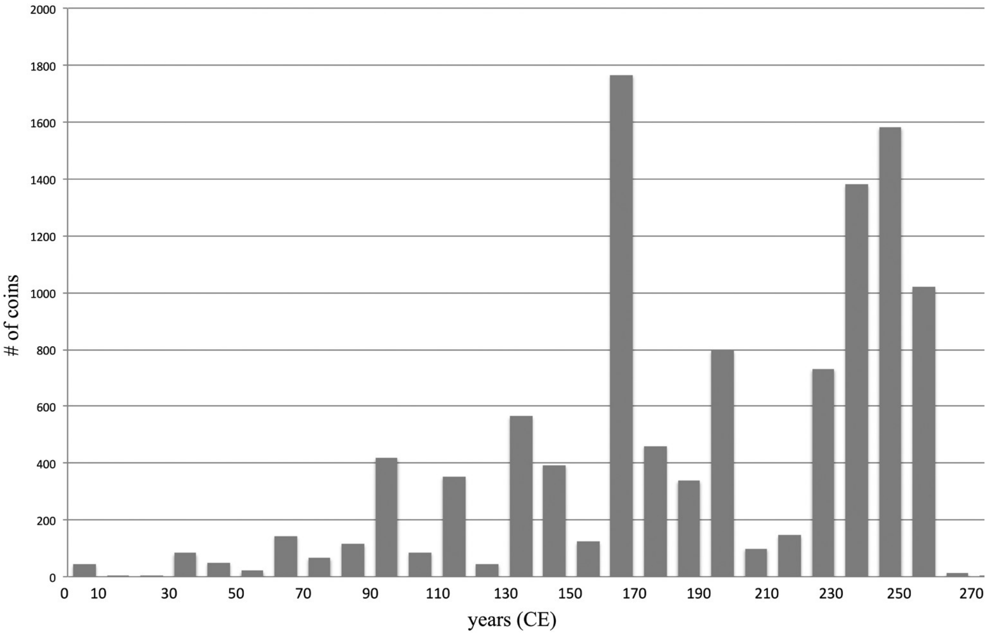

FIGURE 3 *Number of coins found in Roman Africa by decade minted without* antoniniani (*n = 10,862*)

with coinage. They demonstrate the high degree of balance achieved by the region's coinage circulation, with the lower-value bronze currencies leading the way overall. In general, the evidence supports a model of the economy where high-value transactions would be made in gold; silver would be used to make other large or bulk purchases, to pay some salaries, and as a store of wealth; and bronze would be used for medium-level as well as small, quotidian purchases and as a more modest store of wealth. It is important to note that other provinces also exhibit similar patterns, although with some important differences. For instance, I catalogued 6,672 *sestertii* minted during the imperial period found in hoards in the Gallic provinces, comparable to Africa's 8,045 (although North Africa is a larger area than the Gallic regions). The major difference is that when the overvalued *antoninianus* was introduced in the early third century, they appeared first and had a much more profound impact in northern Europe than in the other western provinces (more on this in Chapter 6). Over 30,000 *antoniniani* are known from the Gallic provinces, and almost as many more from Britain as well.[28]

28 Hollard 1995; Estiot 1996; Bland 2013.

TABLE 4 *Number of coins found in Roman Africa, by denomination and find context*

Denomination	**Hoard**	**Site find**	**Grand total**	**% of total**
antoninianus	19,680	368	20,048	60
as	4	213	217	0.65
aureus	38	1	39	0.12
denarius	4,603	135	4,738	14
dupondius	2	68	70	0.21
quadrans	ø	10	10	0.03
sestertius	8,045	168	8,213	24.5
unidentifiable bronze	ø	190	190	0.5
Total	32,372	1,153	3,3525	100

This model also explains the pattern exhibited by the context of coin finds from Africa shown in Table 4. There is no need here to go into the intricacies of how ancient coins get lost in order to be recovered in modern times and, thus, available to scholars.[29] Suffice it say that, in general, large numbers of coins grouped together—hoards—typically represent the accumulated wealth of an individual, family, or perhaps a group like a trade organization, and generally are made up of the highest-valued coins available to the hoarder. Conversely, site finds represent the lower-valued coins in circulation and are, in essence, 'loose change' lost or discarded during everyday activity and not recovered because the loss was unknown or was not worth the effort to recover. A relatively low but steady loss-rate of low-denomination coins, therefore, fits with the idea that Africa enjoyed a well-functioning monetized economy which featured enough small-scale activity that such coins were sufficiently in demand that they were lost and unrecovered with some regularity, yet were useful enough that they were not discarded in any large quantity. Contrarily, higher value currency such as the silver *denarius* was useful as a store of value or for large-scale activity such as state expenditure or the exchange of luxury or bulk goods, things which occur less frequently than smaller-scale expenses and which require the accumulation of large groups of coins. This would explain why *denarii* are most commonly found gathered together in hoards. *Sestertii*, then, exist on the borders of the two categories, for they are useful both in daily transactions such as paying wages on a modest local

29 See Burnett 1991 as well as Reece 1996 for interesting treatments of this topic.

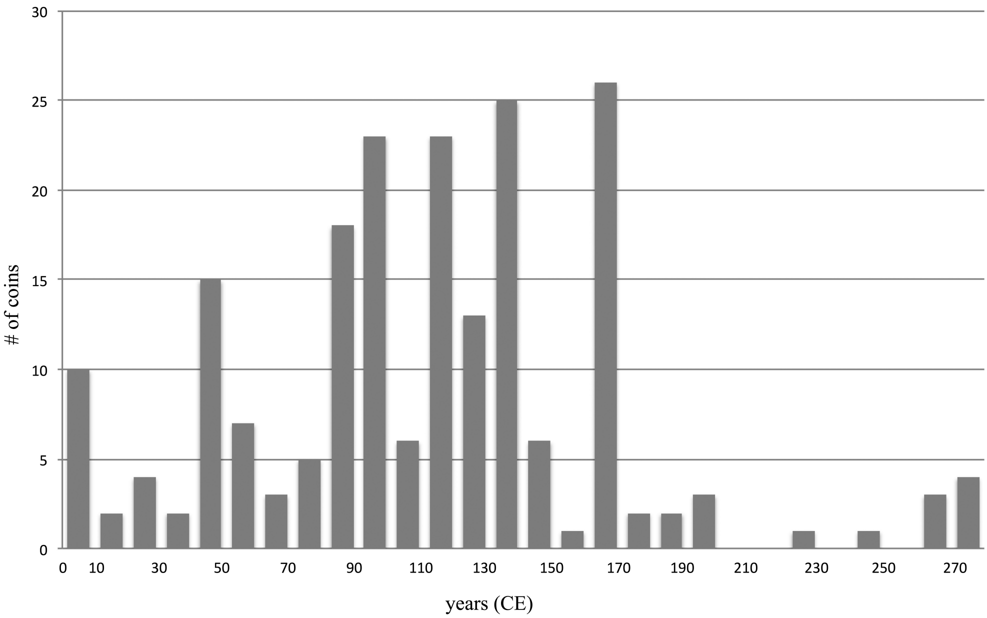

FIGURE 4 *Number of low-value bronze* asses *from site-finds in Roman Africa by decade minted* (*n = 205*)

scale or for buying modest quantities of consumer goods, but also seem to have functioned as a store of value. This why they appear, at least in North Africa, in relatively large numbers in hoards but also show up as site finds. It also explains the patterns seen in Figures 4–6 showing a good supply of very low value bronze *asses* as site finds up to the late second century, when financial troubles started to hit the Empire (more on this in Chapter 6), a fairly steady loss rate of the medium-value bronze *sestertii* throughout the imperial period, and an increasing number of high-value silver *denarii* being lost over the course of the second century as its value was being consistently lowered due to inflationary forces, until a complete drop-off in the mid-third century when it was effectively replaced by the overvalued billon *antoninianus*.

Critically, all of this fits with the evidence from the other parts of the western Empire as well. This material has been discussed by several prominent numismatists in previous work, so I will not repeat their work here.[30] Throughout

30 Notable examples are Besly and Bland 1983; Étienne and Rachet 1984; Estiot 2002; Van der Vin 2002.

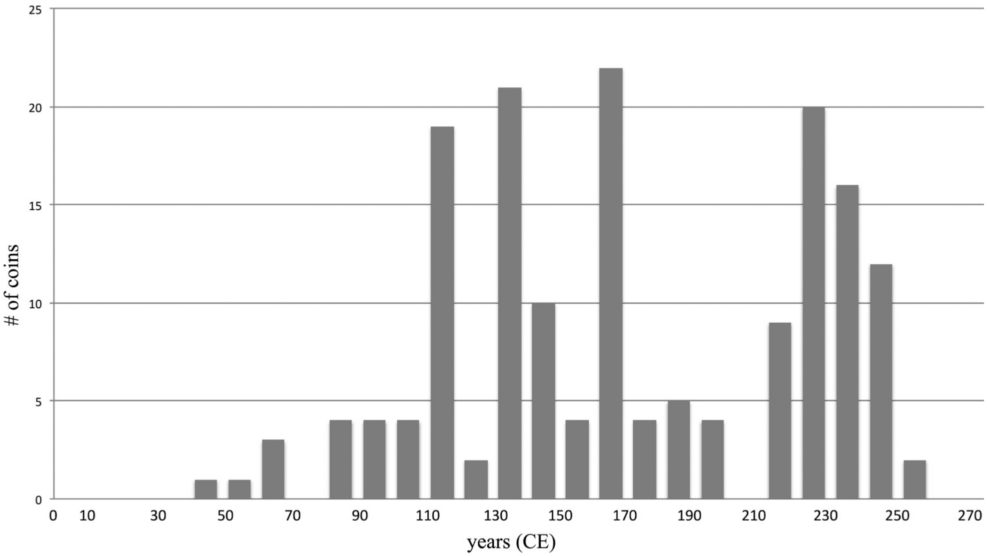

FIGURE 5 *Number of medium-valued bronze* sestertii *from site-finds in Roman Africa by decade minted* (*n* = *167*)

Italy as well as Britain and the Spanish and Gallic provinces, significant numbers of coins of all denominations, including the fractional bronzes, show up in our records. This is not to say that there is complete coherence among the numismatic records of the different provinces, nor that all the regions were perfectly integrated into a holistic economic unit. Far from it; there were substantial differences in the quantity and types of coins that circulated in each region, differences that became increasingly pronounced over the course of the third century CE. In Chapter 6, I treat this crucial period in some detail, pointing out these regional differences and what they can tell us about the development—and partial collapse—of the western Empire's overall economic functioning.

The main conclusion to be drawn here is that the full numismatic record from the western Empire supports my reading of a highly monetized economy featuring a multi-leveled minting policy supported by the Roman state for a complex mix of reasons. I explain above why we are right to think that these coins were indeed used to a large extent for market activity and not simply as stores of wealth or prestige markers. This notion is further supported by work demonstrating that these coins were actually *used*, namely passed from hand-to-hand in transactions. In fact, it is possible to trace with some degree of precision the rate at which Roman coins lost part of their metal due to being handled in this way over years of use. These studies demonstrate unequivocally

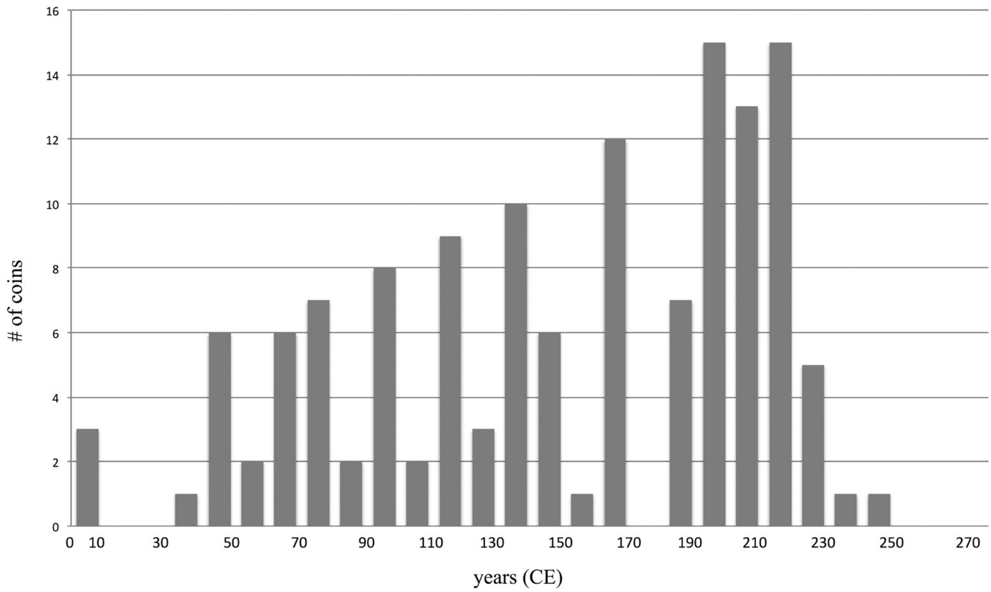

FIGURE 6 *Number of higher-value silver* denarii *from site-finds in Roman Africa by decade minted (n = 135)*

that Roman coins show a fairly steady rate of use-wear, though there are some regional differences and changes over time.[31]

Another important element of this whole process often lost in arguments about coin production is that for the soldiers' salaries to have meant anything, the money they received had to have some *purchasing power*; namely, they had to be able to procure goods and services through some sort of market exchange to at least meet their basic needs. The issuing, circulation, and use of coinage, then, has everything to do with market activity. This holds true not just for soldiers and other officials supported by the state, but the activity of all users of Roman coins relied on these market mechanism. The desire for small-denomination currency, used in low value daily transactions, should not be discounted as a motive for the minting authorities, although this is precisely what is done in most accounts of ancient economies. The state-centric view of minting noted earlier needs to be amended to include not just the benefits that ancient states gained by monopolizing the minting of coins, especially high-denomination currency. But it needs to include the state's recognition of, and desire to ensure, a well-functioning monetary system, which by necessity

31 Duncan-Jones 1998; Hoyer 2013a.

includes both high as well as lower-denomination currency. This is not meant to imply any great altruistic motive to the Roman state in supporting the welfare of the poor. Rather, I am arguing that it was in the state's own interests to keep coin users well stocked with low-denomination coinage. One reason for this is because transactions will occur whether or not the state is involved, meaning that counterfeit coins are made in increasing quantities when the official coins are insufficient to meet the demands of the market.[32] Large quantities of imitation coins circulating in a given area can devastate a market, causing inflationary spikes or lack of trust in the coinage due to an unregulated increase in the amount of money in the economy and driving good quality coins out of circulation.

Furthermore, the state had a definite interest in ensuring that its high-denomination currency maintained its real economic value. Any change in the supply or value of one metal affected the others, for there was always a standard exchange rate between the different denominations in the Roman world. Thus, if the value of one denomination changed, say through changes in its precious metal content (namely, its *intrinsic* value), it would put stress on the rate at which the coin was exchanged with other coins. That would exacerbate inflationary periods, since the affected coin will effectively cease to be accepted in transactions at the official tariff as its nominal exchange rate no longer mimics its intrinsic value. In order for the state to continue to receive some return on minting the silver and gold coins which it used to meet its largest financial obligations, then, the value of the bronze denominations had to remain fairly stable. Thus, it was absolutely crucial to keep all parts of the trimetalic monetary system intact.[33]

For the state to meet all of its financial obligations and to continue to mint large-denomination silver and gold coins at a reasonable cost, it was imperative that it also mint fairly high quality low-value bronze coins, even though there was a very low marginal return on minting such coins. This was necessary in order to keep market systems throughout the Empire sufficiently liquid so as to avoid the pitfalls of an economy where only high-end transactions could

32 See Bransbourg 2011, 104–109 for a discussion of the impact of imitation currency on official issues and of the changing relationship between bronze and silver coins in the Republican period.

33 Crucially, by the beginning of the imperial period the use of bronze was so well entrenched in the Roman monetary system that it is not conceivable that the state could have simply stopped minting bronze coins and changed into a bimetallic system. Moreover, silver is not particularly effective for small-scale activity, so relying on only silver and gold coins itself would have triggered an inflationary spike.

operate with official coins while small-scale activity would be either undersupplied with coins of reasonably small denomination, or be forced to function through barter and with imitation coins; exactly the problems which plagued much of the Empire during the mid-third century through a period of high inflation and when small-denomination currencies were largely discontinued as official state currency. This is, admittedly, a fairly bold claim and one that goes against some of the accepted idea of the function of Roman coinage, but it is the most compelling explanation for all of the evidence we possess. It is largely in this area, moreover, that the numismatic evidence converges with that of other material, for it suggests that coinage was being brought to and used in various regions largely to cover the needs of investors, producers, and consumers of the Empire's agricultural and manufactured goods; the coinage was, therefore, part of the same system supported also by credit and other non-physical monetary instruments as discussed throughout this work.

The final important aspect of this numismatic material that I will raise here is how coins were actually distributed throughout the Empire. All of the Roman coins found in the western half of the Empire, at least after the reign of the Emperor Tiberius and before the third century turmoil, were minted in Rome or, to a much lesser extent, Lugdunum in modern-day France. Yet, as I have explained, coins are found in large quantities all over the area held by the Empire and even beyond.[34] How, then, did they get from the mints to their ultimate users? Again, the traditional view simply assumes that the Roman state paid for and provided the transportation of coins to the various provinces, though this is largely based on the assumption, which now appears to be invalid or at least in need of reworking, that they were aimed almost entirely at the soldiers stationed along provincial borders. Given that, clearly, coins were minted for a much more complex set of reasons and users, it becomes unclear whether the Roman minting authorities took it upon themselves to decide when and in what quantities to send low value coins to different regions, or if the call for coins came from some authority or private citizen in the province receiving them.

There is, in fact, evidence from the eastern Empire for this second scenario. An important inscription found at Rhodiopolis in Lycia from the second century CE honors a certain Opramoas, a private benefactor of that city, for having paid for bronze coins to be minted at Rome and shipped to Rhodiopolis in order to be used by the city's citizens in market activities.[35] This suggests that the

34 Numerous Roman coins have been discovered in South Asia, for instance Burnett 1998.

35 Katsari 2003.

usefulness of small change in performing market transactions was recognized by people outside of the state apparatus and that there was demand from the users of coins to remain liquid in terms of the cash supply. It further supports the interpretation of the numismatic material in general, for clearly these sort of considerations were not alien to ancient thought.

There was one major difference between the eastern and western portions of the Empire in terms of minting system, namely that civic mints throughout the East continued to mint their own bronze coins throughout the imperial period, unlike in the West where all coins were minted at Rome during the second and most of third centuries CE. The problem faced by Opramoas, then, may have been that the bronze supply from local sources was insufficient and needed to be supplemented by the central mint at Rome, which would not apply to the western provinces. Lycia, however, did not produce its own civic coinage, so perhaps the problems faced by Opramoas in fact do apply rather well to the western provinces. Unfortunately, no direct evidence of a similar procedure to what Opramoas undertook survives from anywhere in the western half of the Empire. Still, local demand for coinage is a very persuasive alternate explanation for how and why coins ended up in the Roman provinces without appealing to soldiers' presence.

Another, similar scenario is that professional bankers or money-changers could have 'purchased' coins from the mint in the same manner as Opramoas, although with the goal of making a profit by distributing the coins to customers with a mark-up rather than as an act of munificence. Again, direct evidence for the activities of such individuals in the Roman world is notoriously sparse, so this explanation must also remain merely speculative at the moment. It is nevertheless worth exploring the different possibilities, especially since it is unmistakable that the traditional model of state-run minting and distribution based on state needs alone is unsatisfactory, and some other impetus must be found. In any case, it is likely that some combination of state-led activity and organized initiatives by bankers and other groups of financially-savvy Romans, as well as ambitious individuals like Opramoas, combined to ensure the monetary health of the Empire, at least during the first two centuries CE.

4 Supplying the Demand: Coinage, Monetization, and Market Development

To sum up, I argue here that the numismatic record from the western Empire supports the model of a well-functioning economy supported by intensive agricultural exploitation, an institutional environment which encouraged and

facilitated the creation and movement of credit and investment into productive enterprises, and a high-functioning currency system that allowed for a wide range of market activities to occur with cash exchanges. Furthermore, the numismatic material calls into question some of the traditional explanations for Roman minting practice and coin usage. By exposing the insufficiencies of explanations for state-controlled minting, which focus almost exclusively on the need to pay soldiers' salaries; and on coin usage, which similarly concentrate on the activity of state employees and dependents, I propose new interpretations which focus instead on the demand for coinage created by economic actors and the needs of economic activity on local and regional scales.

How exactly does all of this evidence for money tie up with interpretations about the overall productive capacity of the Roman economy? Again, elite benefaction offers a clear glimpse into the interconnection between these different domains. I spend a great deal of space above explaining how all of the evidence, take together, supports *only* a system whereby benefaction requires tapping into market systems and utilizing money to purchase many for the goods and services required by the benefaction. For instance, when a benefactor spent money to build a statue or to construct or repair a temple and the community then had an inscription made to honour the generosity of such a benefactor, all these things put money into the hands of local laborers. In part, this would have been accomplished through credit, particularly for the larger-scale transactions such as setting up an endowment fund. But many of the smaller transactions, like buying food for a feast or purchasing a small slab of stone to set up an honorific inscription, could very well have been done with physical coinage. This reading is supported—and would go a long way towards explaining—the patterns of monetary activity indicated by the numismatic evidence itself.

This sort of spending would also have, as Keith Hopkins famously noted, a multiplier effect. In essence, since any laborer who was paid for his work with coin or credit money would, in turn, spend that money to pay any cash taxes they owed as well as to acquire goods they required, the initial expense would engender the next, supporting a complex market system.[36] Admittedly, it is not certain that such labor was paid with money rather than payment in kind or as a corvée labor requirement, which was known from the Irni town charter as well as certain lease regulations in Roman Africa.[37] However, to reiterate what I note

36 Hopkins 1978. On the existence of a wage-labor market in the Roman world generally, see Brunt 1980; Scheidel 2010; Temin 2013.

37 Namely, Mancian tenancy, which regulated the terms of leaseholds on imperial property

in the previous chapter, inscriptions which mention money being provided to build a temple, statues, or other works which required significant labor input never mention any other way that the labor could have been compensated. It is, thus, reasonable to assume that the money from such donations was intended to furnish all the necessary means to complete the works being provided, materials as well as labor costs, meaning that the normal practice was indeed to pay workers with part of the money donated by the benefactor.

Therefore, the activity of elite Romans engaged in competitive acts of prosocial behavior like civic benefactions not only exploited an already thriving market economy, but they also then helped enable that market economy to grow and to sustain a high level of activity for the majority of the imperial period. The money injected into the Roman economy by elite benefactions was undoubtedly a spur to marketization by circulating money in various regional economies, though it was certainly not the only, or even necessarily the primary driving force behind this activity. Surely the number of transactions involved in regular, daily exchanges of food and other goods and services dwarfed the number of elite-sponsored transactions. Nor am I claiming that benefactions were the single or most significant cause of marketization or monetization in the Roman world. The crucial point in all of this is that the ability of wealthy patrons to provide these benefactions presumes a pre-existing market system already in operation. The benefactions existed on top of, because of, and helped to perpetuate these pre-existing systems.

Moreover, the investment of endowment funds and other money that was circulating in the imperial economy would have fostered the expansion of production in many of the areas noted above: investment may have been put into one of the agricultural intensification measures such as building an aqueduct in order to increase surpluses, olive presses to facilitate oil production, vats for dying fabric, or perhaps establishing an urban business such as a pottery workshop. All of this activity required capital, both in the form of physical coins as well as credit instruments. This is, of course, merely conjecture about the likely places where money could have been invested, although it is clear from the archaeological evidence discussed above that during the imperial period the region saw a vast increase in irrigation works and other features of agricultural improvement, the establishment of many olive presses (leading to a boom in the production of olive oil), as well as massive urbanization and the develop-

in North Africa. The rent paid by such tenants included some minor amount of labor given to the landlord. For more on this interesting regulation, see especially Flach 1989; Kehoe 1997, 2007; Hoyer 2013b; Lenski 2017.

ment of a great deal of urban manufacturing.[38] This activity is also clearly illustrated by the development of long-distance exchange in a variety of goods that occurred throughout the Roman world during the imperial period, a crucial part of Rome's economic expansion often stressed by economic historians.[39]

I will admit that these points are fairly provocative, as much ink has been spilled by Roman historians over the years arguing over the extent of market integration and monetization in the Roman world, or lack thereof.[40] I do not wish to rehash all of these arguments, though it is worth reiterating that many of the goods and services provided by the elite benefactions described here and in Chapter 2 very clearly relied on functioning markets. For these markets to function, there needed to have been some medium of exchange. Though barter surely continued to play an important role in many parts of the Empire, particularly in the rural areas,[41] the numismatic evidence shows that there were certainly a large number of economic transactions occurring through the exchange of coinage. This coinage, then, formed the backbone, or anchor, of the Roman monetary system, complimented and expanded by the use of credit.

It is also true that many elite Romans owned property in the countryside and could have furnished their needs entirely from their own land without recourse to market activity. This argument has, in fact, been made to try to undervalue the extent of market development and monetization in the Roman world. The evidence that there were markets active throughout the western Empire shows, at the very least, that it was possible for any wealthy Roman who had business in a city to purchase food and other goods at urban markets. Additionally, non-elite urban residents such as craftsmen, traders, merchants, and artisans would have had an even greater dependence on these urban markets to supply their food needs, since, being relatively poor and needing to work in a city, they would not have had access to large agricultural estates from which they could draw supplies. It also needs to be noted that several

38 See the next chapter for further discussion of the significance of Roman urbanization.

39 D. Peacock and Williams 1991; Bonifay 2004; Fentress et al. 2004; Peña 2007; Bes and Poblome 2009.

40 Temin 2013 offers the most forceful argument for a high degree of market integration throughout the Empire. Bransbourg 2012 offers a compelling account for a lack of substantial integration between the different regional markets, though he agrees that within each region there was a high degree of market development during the early Empire. See notably Erdkamp 2005; Bang 2008; Hobson 2015b for the contrasting view.

41 This is not to say that rural areas lacked infrastructure for markets or were free from monetized exchange, as both the archaeological and numismatic evidence discussed in this chapter make clear.

scholars have pointed out in the past that all of the material evidence for expanded economic activity in the Roman world discussed in this chapter, which is undeniably overwhelming, does not necessarily reveal market activity; it could be interpreted instead as exchange motivated by landowners simply moving goods between different holdings, by the state moving around goods collected from taxation or rents on state property and sending it to soldiers and other dependents in the provinces,[42] or reciprocal gift-exchanges between elites motivated by social or political, rather than economic, gain.[43] It is true that the archaeological evidence, *by itself*, does not allow us to differentiate between true 'market' trade and other forms of exchange. And, of course, there were numerous motivations for sending goods across long distances, economic and otherwise.

Yet, when all of the evidence is considered together, it is difficult to accept an overly conservative view of 'exchange without money or (fairly well-integrated and high-functioning) markets'. Remember that we are dealing here with vast amounts of goods produced on mass scales, production which, again, required a significant outlay of capital that needed to be made up for somewhere in order for the system not to quickly collapse on itself. Remember too all of the coinage produced and circulated throughout the Roman world, coinage which, as I explain above, cannot simply have been designed for soldiers and other government functionaries to receive as pay, but was clearly *used* to acquire goods and services like these. And let us not forget either that we do, in fact, have direct evidence for the use of money to purchase some of these goods and services in the form of inscriptions detailing the establishment of endowment funds. Nor is the idea satisfactory that all this production and exchange can be explained by a 'predatory imperial state' trying to extract as much of the surplus production as possible from otherwise market-averse, self-sufficient peasant-farmers.[44] The Roman state was not large enough or heavily involved enough in surplus extraction to account, on its own, for the production, investment, and exchange of goods and services that we see, especially in highly urbanized, under-militarized areas like North Africa (more on this below). Together, all of this supports the notion that true, monetized market activity was a substantial part of the Roman economy, a claim that cannot be made for the contrasting view.

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42 The 'Taxes and Trade' model: Hopkins 1980, 2002.

43 This view has, for instance, been recently and articulately recapitulated by Bang and Morley in a forum on the nature and extent of Roman trade (A. Wilson, et al. 2012).

44 This is, in broad strokes, the position held by Peter Bang, Paul Erdkamp, Neville Morley and others (Erdkamp 2005; Bang 2008; Wilson, et al. 2012).

CHAPTER 4

Aligning Public and Private Interests: Public Building, Private Money, and Urban Development

At several points in the preceding chapters, I mention some of the problems involved in trying to disambiguate 'public' from 'private' in the Roman world. This is a fundamental issue not only for the imperial Roman economy, but for the study of political economies throughout history, though it does not always receive much attention. The main issue is that we know from decades of research and theory concerning the role of state agents, of political forms and institutions, and of non-state economic actors, that all of these factors play crucial yet distinct roles in political and economic development. In the Roman case, however, as with other ancient states, it is often difficult if not simply impossible to tell these different factors apart. In the previous two chapters I discussed at length the way that Rome's elite engaged in acts of benefaction and outlined the broader economic ramifications as well as the underlying mechanisms behind this activity. As mentioned, the vast majority of extant examples involve a benefactor either celebrating their election or that of a family member to a municipal office, or being noted as having held some public position in their lifetime. In short, nearly all the benefactors we know of from the Roman world involve political agents, yet as I explain the benefactions themselves were performed mainly by people acting as what we want to call *private* citizens.

The problem is entirely with us modern scholars, not with the evidence; it is only because we have a desire to segregate the public from the private, to distinguish the two realms as being exclusively concerned with, respectively, the political and the economic, that we have a hard time understanding the Roman case. In reality, the reason it is difficult to disambiguate the two is that the Romans did not make much of a distinction to begin with. This does not mean, though, that it is impossible for us to reach any conclusions about the separation of public interests from, or better the alignment with, private interests. It just means that we need to be very careful and recognize that it involved a complex, overlapping set of relationships and activity. It is likewise crucial to recognize the differences and interconnections between the various levels of Roman society: the state-wide, the regional, and the local. In this chapter, I look further into these issues, referencing some modern theories explaining why this topic is such an important one for economic history. I then

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offer a close reading of evidence from Rome's North African provinces as a case study to illustrate how the overlapping interests of state and individual became aligned to a certain degree. Next, I note how the very limited role of the Roman central state left a great deal of room for local and provincial elites to pursue their own interests, both as private actors and as public officials and members of a wider community. I close by pointing out how this balance between public and private interests manifested itself in the development of urban infrastructure and other civic works to satisfy the needs of a relatively large number of groups within Roman society. This will lead directly to the following chapter, where I discuss the problematic and controversial issue of economic growth and social development in the Empire.

1 Public Needs and Private Incentives

The idea of public and private interests as separate, and often competing, is quite a difficult notion to let go for a modern, western audience. The lingering influence of mainstream neo-classical economics in not only the minds of the general public, but also for many scholars of economic history remains largely wedded to the concept of a state (i.e. the 'public' sphere) as a rules-generating organization concerned with political survival and (at best) social welfare, while economic activity is the proper domain of individual agents (the 'private' sphere). Influential economists during the mid twentieth century—the so-called Washington Consensus or Chicago School thinkers[1]—argued, sometimes implicitly, sometimes directly, that the state and the individual economic actor are not only distinguishable, but are inherently at odds with each other. The calls for *laissez-faire* governance and the importance of privatizing public works follow from this basic assumption.

This 'consensus' has collapsed in recent years, however. Economists, political theorists, and development scholars have seen the failures of *laissez-faire* policies and indiscriminant privatization to produce positive effects among the world's poorer nations in the last half of the twentieth century. Most now agree that economic development is inexorably linked to wider political and social systems.[2] This largely involves recognition that economic agents, even when unquestionably 'private' individuals, are constrained and motivated by specific incentives, which are themselves mainly constructed by their society's institu-

1 Friedman 1962; Stigler 1988 offer useful accounts of this school of thought.
2 Stiglitz 2002; Rodrik 2008, 2011.

tional structure.[3] This includes legal regulations enacted and enforced by state mechanisms, notably the way that property rights are defined and protected, but also the overall shape, structure, and functioning of the political system in which economic actors act. For instance, the type, amount, and collection of different taxes and tributes collected by the state from individuals and corporate groups (businesses, firms, etc.) clearly has a tremendous impact on how those agents can operate and what funds they will have to do so. Furthermore, various regulations and procedures regarding the ability to trade with groups from other states, or about the degree of oversight that public officials place over business, such as through enforcing safety regulations or emissions standards, likewise have been pointed to as key determinants of economic performance.

Similarly, other features of a society beyond its institutions are now being recognized for their role in economic development. For example, the way that a state uses its revenue in building roads, power grids, and other infrastructure determines to a large extent the type and scale of production that can be achieved at a given place and time. Even broader, what we might call ephemeral traits—namely, cultural norms and behaviors—have been shown to play a key role in economic functioning, often through their interaction with the more formal institutional features mentioned above.[4] In particular, there has been some innovative research in recent years showing that the ability of large groups of people in a given society to cooperate with each other is in fact one of the key determinants of a whole host of outcomes: economic performance, political stability, military success, and even social equality and overall well-being.[5] This view of economic performance as being inexorably intertwined and coevolving with political, cultural, and social systems, rather than being opposed to or indeed hindered by them, has been a great boon to the study of modern economic development. It has paved the way for a new wave of research that focuses not simply on the size of a society's economic output, but on how the various features of a society, both economic and non-economic, interact to produce a wide range of divergent outcomes. Again, these outcomes include not only economic performance, but also other measures of well-being such as gender equality, access to education, political freedoms, etc.[6]

3 North 1990; Aoki 2001; Sachs 2005; Fukuyama 2012; Acemoglu and Robinson 2012.

4 See the discussion of this in the introductory chapter.

5 Ostrom 1990; Putnam 2000; Turchin 2003; Henrich et al. 2004; Morris 2013; Turchin 2014.

6 This is reflected in the increasing number of organizations dedicated to tracking measures institutional and cultural performance around the world, such as the United Nations Human Development Index, the World Bank's World Governance Index, the World Justice Project,

It should be crystal clear from the preceding pages how large of an impact these new directions in economic and development research can have for the study of the past. This impact has, however, been slow to manifest itself in work on the Roman economy. While much excellent scholarship has been produced in this area, it tends to follow the older, traditional approach to economics, focusing on identifying (or estimating) levels of productivity, output, wages, and prices from around the Empire.[7] These are, without doubt, crucial measures and these studies have done much to advance our understanding of the Roman economy. There is, moreover, a long tradition of work on the cultural and political life of the Empire, particularly regarding the position and activity of Rome's elite as outlined in previous chapters. The problem is that these two strands of ancient historical study are rarely put together, though this is precisely what is recommended by the recent progress of modern political economy theory and, more importantly, what is needed to gain a true appreciation of the full complexity of the Roman evidence. Indeed, the culture of intra-elite competition that resulted in competitive acts of ostentatious spending on the public good—the benefactions discussed throughout this work—belong to this category of intertwined cultural, political, and economic interests.

This brings me back to the observation with which I began the chapter; in the Roman world, the public/political and private/economic spheres overlapped in ways unfamiliar to a modern, western observer. It is precisely this overlap that needs to be explained and, wherever possible, quantified. This is necessary to explain the motivations of Rome's elite, unquestionably the most prominent players in the imperial economy and who, as mentioned, typically held a complex web of public and private interests. It is also necessary for understanding the overall structure of the imperial economy, which relied to a very large extent on the semi-public activity of these elite individuals. This reliance is particularly notable when considered next to other ancient states or even modern ones, which have tended to reserve a stronger role for the central state apparatus in economic affairs (but more on that below).

Finally, exploring the interactions between public officials, private individuals, and the overlapping interests at all different levels of abstraction (the

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and a host of others. This trend is encapsulated best in the prominent Organization for Economic Co-operation and Development report published in 2009 Fitoussi, Sen, and Stiglitz 2009, which calls for a greater awareness of measures other than GDP or income per capita to assess global levels of wealth and well-being. I discuss this important report further in the next Chapter.

7 Notably, Duncan-Jones 1982; Goldsmith 1984; A. Wilson 2009a; Scheidel 2009d; Scheidel and Friesen 2009; Scheidel 2010; Temin 2013; Hobson 2015b.

imperial, regional, and local) helps also to illuminate the role of the non-elites, a key group that has been largely left out of the discussion to this point. Indeed, in many ways the political leaders of the Empire relied on the participation, or at least tacit consent, of the general population to maintain a stable rule. At the same time, and largely for that very reason, the state elites sought to provide a certain level of service and benefits to the people on whom their elite positions relied. This is the reciprocal element of the prosocial culture that had been evolving within Roman society from its early history. The imperial Roman state, like all states, had to find the right balance between extracting the surplus resources of its governed population through taxation and tribute, and giving just enough back to the great, tax-paying masses. This 'giving back' typically comes in the form of public goods and other services to legitimize the ruling elite's lofty position and demonstrate some tangible outcome of the extracted revenue; otherwise, instability, revolution, and rebellion inevitably follow.[8] This 'recycling' of a society's surplus production, or 'free-floating' resources in sociologist Shmuel Eisenstadt's provocative phrasing, obviously has a huge impact on the structure and performance of that society's economy. This is true even if the decisions about what taxes to collect, how much to take, and what to do with the revenue are made largely for social, cultural, and political reasons rather than purely out of economic expediency.

The type and quantity of the goods and services provided by the state's elite with these resources will, therefore, determine to a significant degree the precise nature of this impact. The whole system, then, from the make-up of the political system to the intertwining interests of state and non-state elites to the involvement of non-elite residents in both supporting and benefiting from (or not) the prevailing elite interests, needs to be defined to unlock the mystery of any society's political-economy. Imperial Rome is certainly no different. This is, of course, a monumental task, but I offer here a case study that touches on all of these issues and, I believe, points the way to how future research can uncover the alignment of public and private interests in the imperial economy. This will hopefully prompt scholars working on these issues in other regions and time-periods to engage with the Roman material in a more substantial way than is currently the case.

8 Foundational theoretical works on these notions include Eisenstadt 1963; Olson 1965, 1982; Levi 1989; Mann 1986; Goldstone 1991; Turchin 2003.

2 Rome: A World of Cities

Rome was a world of cities; the dramatic rise of urbanization in every area that fell under the Empire's sphere of influence is, indeed, one of the hallmarks of 'Romanization'. Table 5 shows a recent estimate of the Roman urban population. The urbanization rate ranges from about 10–20%, a fairly high figure relative to other ancient states, higher than many previous estimates.[9] Indeed, this rate matches or surpasses many late Medieval figures. Urbanization for mainland China, for instance, has recently been estimated to have risen from about 10% under the Song Dynasty in 1100 CE to only about 13% by the beginning of the 20th century.[10] Even the fairly precocious parts of northern Europe—England and Holland—did not surpass 20% urbanization until the sixteenth century, reaching nearly 40% by the eighteenth.[11]

Urbanization is in all societies a key proxy for a whole host of activity. Roman cities in general served as the nexus of political, economic, religious, and cultural activity in each region. Roman cities functioned in a hierarchical network of interlocking urban spaces, ranging from the provincial capital (such as Carthage in the case of Africa Proconsularis, or Corduba in the Spanish province of Baetica), to other large cities (e.g. Lepcis Magna), to smaller towns and villages. Each type of city had its own different duties and privileges, including collecting various taxes for the imperial treasury, while some had the right to keep certain kinds of income in the local coffers citizens, and residents in the larger cities had certain rights of citizenship such as voting and various legal protections.

We saw earlier that the legal and political life of a Roman province centered around the municipal town charter like the one known from Irni in Spain and that municipal affairs were managed by various groups of officials modeled after the imperial Senate and councilors of the city of Rome herself. I have also explained how important cities were in underpinning the imperial economy, being the primary seats of consumption as well as a good deal of production, bringing together money and investment capital with markets, and fomenting the intra-elite competition that drove the benefactions which helped to lubri-

9 E.g. the widely accepted rate of 10% offered by Goldsmith 1984.

10 Yi, van Leeuwen, and van Zanden 2015.

11 Milanovic, Lindert, and Williamson 2010. See also the ClioInra www.clio-infra.eu database for the raw statistics of early modern urbanization rates. Importantly, Rome's 10–20% range puts the Empire squarely on par with high-performing Medieval states, underscoring the importance of the urbanization growth experienced during the first two centuries CE.

TABLE 5 *Estimates of urban population and urbanization rate of the Empire in the mid-second century* CE. *Adapted from A. Wilson (2011, 191).*

Threshold for 'urban'	**Estimated number of cities**	**Estimated number of people**
5,000 people threshold	356	7,388,500
1,000 people threshold	1,856	10,388,500
Population estimates	**Urbanization rate (5,000 threshold)**	**Urbanization rate (1,000 threshold)**
55 million	13.4%	18.9%
60 million	12.3%	17.3%
75 million	9.8%	13.8%
100 million	7.4%	10.4%

cate the whole system.[12] A corollary to all of this that I have not touched on much is the great amount of *building* that went on in Roman cities. Almost all urban centers throughout the Empire contained administrative buildings for civic magistrates such as council chambers and courthouses; spaces for market activity and where the public could congregate including temples, baths, theaters and arenas, and fountains; as well as decorative construction, notably arches situated along prominent roads and statues honoring gods and emperors; and many other types of construction. All of this urban building was supported, moreover, by an incredibly intricate and sophisticated network of civic infrastructure in the form of aqueducts, sewage, road networks, bridges, port facilities, etc.

Such civic building was, indeed, a critical aspect of Roman urban life, a vital component of what it meant to be 'Roman'. In fact, building and maintaining this infrastructure allowed cities to show off their wealth and prestige, but was also the main way that they could raise their official status and so gain the privileges that came with belonging to a higher category in the hierarchy. Some of the greatest achievements of Roman architects, artists, and craftsmen are

12 Hanson 2011 makes similar arguments for urban development in Roman Asia Minor, focusing on the positive impact that connectivity for people, goods, ideas and information, etc. between urban areas in a region like Asia Minor had on development.

tied to Roman urban life. Yet, these buildings did not arise by mere state *fiat*. Rather, creating public space in the Roman world was actually a fairly complicated process, involving a mix of local and central state interests along with a great amount of activity by wealthy individuals. Exploring the construction of public buildings in a region such as North Africa as a phenomenon embedded in Rome's particular institutional and cultural structures, involving the overlapping domains of private and public, will help bring all of these important points into clearer focus.

Below, I present the results of a careful and critical examination of building inscriptions recovered from Rome's African provinces. Previous attempts to understand Roman public building have been overly concerned with identifying the ways in which the central Roman state exerted its influence and ideals onto provincial landscapes, or on how local governmental systems worked in concert with the central administration to achieve these same goals. Namely, with outlining a top-down process of 'Romanization' throughout the greater Mediterranean basin. This is, I argue, a somewhat misleading approach because it does not adequately explain the convoluted relationship between public and private interests in the Roman world. What I want to show here is that, in fact, much of the public building which took place in Roman Africa—and throughout the Roman world, including both the eastern and western halves of the Empire—involved some combination of public and private initiative and that, crucially, this complicated arrangement exposes how misleading and unsatisfactory the terms 'public' and 'private' are for explaining this phenomenon.

Key to this argument is seeking to identify the different, overlapping motivations and intentions which the various agents behind public building had and placing these within the context of Roman social, political, and economic systems. This brings us back yet again to elite benefaction, which seems to have driven a great deal of this construction. The most logical assumption to explain Roman public building, which is indeed often followed by historians, is that it typically involved public agents using public funds. This is logical, since it was the most efficient and straightforward way for the state to ensure that the necessary urban infrastructure was in place for the basic requirements of civic administration, tax collection and distribution, and communication and transport. This is also the typical procedure in most modern states and was certainly common throughout history in many parts of the world. Indeed, public buildings in some sense really *ought* to be a publically funded and managed work. The appearance of what looks like 'private' or individual agency in so much of the Empire's urban development, however, would suggest that, for whatever reason, private initiative was actually responsible for the development of pub-

lic buildings and urban infrastructure. As we will see, neither of these scenarios adequately explains the empirical evidence. It requires instead that we reconfigure how we view the overlap and interaction between these different spheres in the Roman world. To explain how this conclusion was reached, let us now look at the evidence itself.

3 Public Building in the Cities of Roman Africa: A Case Study

I turn now to a detailed account of the construction of public buildings and monuments in the Roman provinces of North Africa, focusing on how public, urban spaces in the region were built up. This case study helps to clarify the overlap of public and private interests in the Roman economy. Understanding the management, funding, and administration of public building construction carries important ramifications for the political-economy of the region generally. Roman Africa serves as an excellent case study, since it is one of the few regions of the Empire to preserve a sufficient body of analyzable material in the form of dedicatory building inscriptions along with archaeological remains from the region's many urban areas.[13] Africa is thus an outlier compared to the rest of the Roman Mediterranean, though the general process of public construction and public/private initiative outlined here certainly also describes the other regions, if perhaps on a slightly smaller scale. As with the endowment fund inscriptions discussed in Chapter 2, the material presented here is in many ways epiphenomenal of the wider, underlying system in place throughout the Empire.

I have collected and analyzed 602 Latin inscriptions from the African provinces which detail the construction and dedication of a public building (or parts of a building), including bathhouses, temples, theaters, statues, fountains and aqueducts, monumental arches, libraries, legal and administrative buildings, and colonnaded porticoes, among other things.[14] What I term here 'building inscriptions' were texts inscribed into or appended onto a building in

13 Zuiderhoek 2005 offers similar discussion of the role of elite benefaction in public buildings in Roman Asia Minor, though referencing a somewhat smaller body of inscriptions and coming to a different conclusion about the importance of this elite activity than I do here.

14 See Saastamoinen 2010 for a more complete list of all known Roman African building inscriptions with text and fuller descriptions. My slightly more constrained list ignores those dated outside of the early imperial period and concentrates on the more prominent and useful public infrastructure sponsored.

order to display to the public exactly how the building ended up in the town and who was responsible for it.

Often, Roman buildings are defined by their use; any structure open and accessible to the general public is considered to be a public building. This is obvious, although often the use is equated with the manner of construction.[15] Sometimes the epigraphic material bears this out and it is expressly mentioned in the inscription that some public funding (*pecunia publica*) was used in the construction.[16] In these cases, it is clear that some public authority is using public funds to ensure that the public needs were being met with public buildings. Indeed, providing for the public good through urban infrastructure was an important task of Roman municipal officials. This principle was even expressed through a legal requirement placed on officials to rebuild houses that had fallen into disrepair, using public funding if necessary.[17]

Crucially, however, and somewhat surprisingly, public buildings constructed by public authorities are actually fairly rare in the evidence. Of the 602 inscriptions from Africa that I studied, only 42 (7%) refer explicitly to the use of public funding.[18] More frequent are inscriptions which record the use of private money (*sua pecunia*), namely 243 instances (40% of the total).[19] A typical example of this is an honorific inscription from Cirta, a relatively large town in central Algeria, dating to the reign of the Emperor Marcus Aurelius in the mid-second century.[20] The inscription was set up by a man named Marcus Natalis who is described as holding a variety of important political posts in several towns throughout North Africa. Natalis declares in the text that, in honor of his election to certain posts in the local administration, he donated 60,000 *ses-*

15 For instance, Saller 1982, 156; Briand-Ponsart 1999, 228; Pobjoy 2000, 78–90; Burton 2004, 336; Zuiderhoek 2009, 24–25. Bernard 2016 offers a persuasive recent account of how many people were involved in public building programs, including both 'public' and 'private' agents.

16 See Appendix 2.

17 *Digest* 39.2.46.1.

18 Table 6. Note that the counts of inscriptions in Tables 6 and 7 do not necessarily refer to whole buildings being constructed from scratch, but include parts of buildings being constructed as well as repairs and adornments made to existing structures. My criteria in gathering this list was to include any inscription that mentioned money spent on any type of construction involving a public building in the African provinces.

19 See Table 7 and Appendix 2. This count includes the likely cases of personal money being referenced in the inscription even when the phrase *sua pecunia* is not securely indicated. The Appendix lists only the secure cases n = 185, still a substantial percentage of the total cases where some funding source is indicated.

20 Appendix 2 #454.

TABLE 6 *Count of public building inscriptions from North Africa by named funding source*

Number of extant examples	Public funding (*pecunia publica*)	Private funding (*sua pecunia*)
Count	43	243
% of total extant (286)	15%	85%
% of grand total (602)	7%	40%

TABLE 7 *Count of public building inscriptions from North Africa by funding source and position of named benefactor*

	Individual	Emperor	Collective	Mix	Unclear	Total	% of total
Public Funding	12	1	24	6	0	43	15%
Private Funding	206	2	22	9	4	243	85%
Total	218	3	46	15	4	286	100%

tertii to Cirta's public treasury, set up a bronze statue to the personified deity of Security along with a small colonnaded temple with additional bronze statues to the Emperor, and built a triumphal arch, also with bronze statues dedicated to the Emperor. He further provided a seven day theatrical exhibition and paid for gifts to be showered upon the towns' residents during the dedication of the buildings. Natalis spells out that the triumphal arch and accompanying bronze statues were built with his own personal funds (*sua pecunia*). Further confusing our picture of how public buildings were constructed are occasions where public and private funding were used together. For instance, an honorific decree set up in the small central Tunisian town of Zama Regia by a priest records that a monumental archway was built with public money decreed by the town's chief councilors (*decuriones*), but that he also added his own, personal money to the project.[21] There are even instances where a town records using what is termed the city's own personal money, its *sua pecunia*, rather than the term normally used for public funding, *pecunia publica*. There are also many examples where the source of funding is not specified explicitly, but where public authorities and individual citizens are clearly involved together in a building project.

21 Appendix 2 #382.

These are only a few of the many inscriptions from Roman Africa which reveal how complicated the process of funding, building, and dedicating public buildings in the Roman world could be. Again, the clear-cut involvement of public authorities using public funding for public construction, which we might expect to be the normal operating procedure, covers only a minority of the African public building inscriptions. Indeed, scholars are increasingly recognizing the importance of private initiative in Roman public building programs, even if the role is often seen mainly as defraying some of the cost to the state.[22] Nor can it be said that private initiative alone explains the impetus for most of the public building constructions that we know of from North Africa. For even in cases where personal, or 'private', funding is explicitly noted, the public/private distinction is not entirely clear, as I explain above.[23] In 389 (65%) of the total African building inscriptions, an individual is named as being part of a construction, typically as the primary benefactor, but also sometimes in other roles.[24] Of these individuals, 254 (65% of the 389 named individuals) are noted as holding or having held some public office in their lifetime. Yet, the very act of naming an individual in a building's dedication, even though he is a public official, belies any notion of collective, public responsibility for the construction. Moreover, as mentioned, there are instances where a public institution, whether the town itself (a *municipium, colonia*, etc.) or a governing body such as the *ordo decuriones*, is collectively named as responsible for a public building, namely 46 (7.5%). Of these, however, only about half (24; 4% of the total) record the use of public funding, while the rest state that 'personal' money was used. In sum, a very convoluted situation.

It is immediately apparent after subjecting the full body of African building inscriptions to close scrutiny that the chief concern of the authors of the texts was to identify and to give credit to the agents deemed responsible for the building as well as to honor and highlight the benefactors' successful political careers. This explains why building inscriptions tend to list the individuals involved in a building project, naming the offices they held. Public buildings were, of course, only one part of the larger custom of elite benefaction described in previous chapters. Like other types of benefaction, such gifts were part of the overall program of prosocial activity and the desire for social capital, so the inscriptions that mention these acts are explained by the same factors

22 E.g. Duncan-Jones 1990, 160–182; Lomas 2003, 34–38; Jaschke 2006, 202; Thomas 2010, 847.

23 Interestingly, a recent study of building in early Islamic Egypt finds the same difficulty assigning the labels 'public' and 'private', arguing, as I do here, that these terms are inadequate to explain the complexity of the historical reality (Denoix 2002).

24 Figure 7.

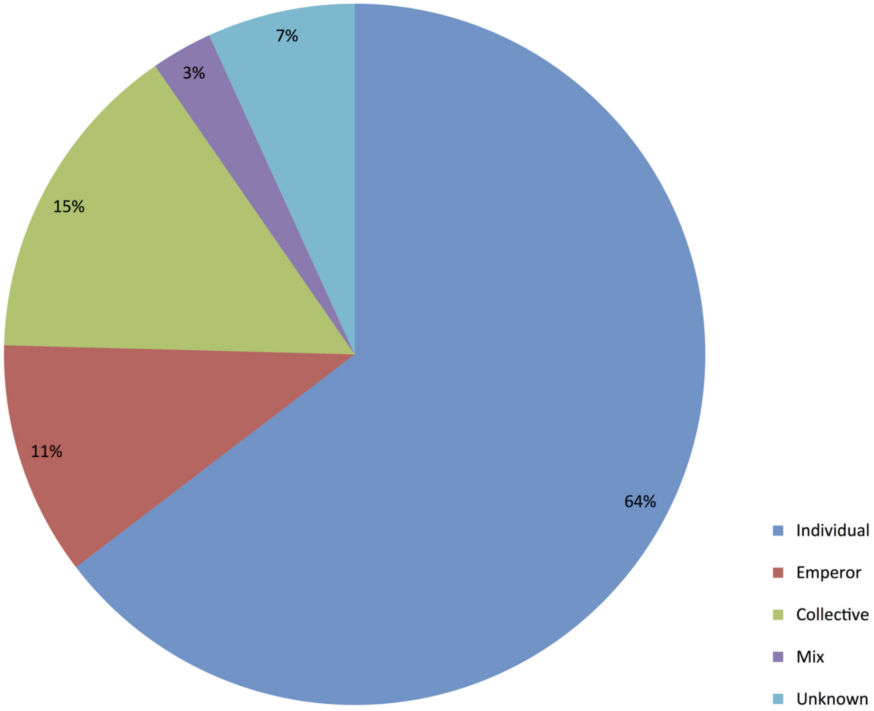

FIGURE 7 *Breakdown of position held by named benefactors of endowment funds: individuals, whether public officials or not; the Emperor named as the individual benefactor (not simply the position); Some collective group, such as a trade association; a mixture of benefactors; and unclear*

as well. Even in the cases where it is made explicit that either public or private money was used (but not both), the inscriptions give the distinct impression that the main point was not to provide an account of what money was used in a public construction project. Indeed, there were other mechanisms for Roman magistrates to give accounts of how public money was used rather than in publically displayed decrees.[25] This type of account-keeping is not what is being recorded in the building inscriptions discussed here. Rather, the purpose of inscribing on stone a record of the people and funding used in a public building was primarily intended to highlight and thereby honor those responsible. In fact, as demonstrated above, a mixture of funding sources was often used.

25 E.g. regulations in the Irni town charter noted earlier required that accounts be made when a town's public funds were spent.

Building inscriptions, therefore, served to ensure that the proper amount of credit went to each actor involved: how much was spent by an individual voluntarily and generously out of his own pocket, how much was given as a faithful performance of their obligation in paying a fee, how much was spent by the public authorities from the limited resources available to a provincial Roman town, etc. Moreover, buildings are in many cases not the only benefaction listed in an inscription. Often a sponsored building program is listed alongside the other type of benefactions discussed in the previous two chapters, such as theatrical performances, feasts for municipal officials, free distributions of cash, meat, and bathing supplies for the town inhabitants, etc. Overall, 186 (31%) of the inscriptions clearly mention multiple public structures, and 60 (10%) include benefactions other than buildings. In these cases, each building is simply one part of a larger program of benefaction being undertaken by some Roman notable.

Viewing public buildings in this light suggests that a useful way to approach the material is to focus on who is given credit for a building project, regardless of the mixture of funding sources used. This gives a much clearer illustration of the different types of building inscriptions than trying to disentangle whether private or public activity was responsible for the constructions. Importantly, the approach is also more faithful to the evidence itself, for the inscriptions likewise focus on highlighting the gifts and achievements of benefactors. What the evidence shows is that, in the overwhelming majority of cases where the dedicant can be identified, the inscription names an individual or a number of individuals—65% of the total. This number jumps to 76% if Emperors are included as individuals, which seems reasonable since in such instances the Emperor is specifically identified as the individual benefactor responsible for the construction, in addition to being a public figure acting on behalf of the state authority. This leaves only 15% where a public/collective authority is named as the primary force behind a building, typically the town itself or one of the municipal governing bodies, with the remaining 9% either a mixture of individual and collective actors or indeterminate.

There are a few possible objections to my reading of all this material that need to be addressed before I can move on to discuss the wider ramifications. First, any individual who sponsored a public construction project can be seen as acting in the public sphere by virtue of the town being involved at some level, whether by taking the money given as a fee or gift, or simply by granting permission to a benefactor to build something.[26] Any public building project

26 Many building inscriptions use the phrase 'by decree of the decuriones' (*ex decreto decu-*

was 'public' to some extent, as the town authorities did impose some control over what buildings could be built and how large they could be, or if only by virtue of the fact that such buildings served the public utility in some way. It is also true that the activity of municipal officials in the provinces was subject to the scrutiny of state officials. Representatives of the Emperor and the central state, however, although they were legally empowered to exert control over how local communities collected and spent public funds, in practice seem not to have had a great influence over municipal affairs. Indeed, it can be argued that the fairly late development of the office of *curatores rei publicae*—agents appointed directly by the central state in order to oversee the activity of provincial officials—in the second century CE was in part an attempt to curb some of the autonomy which provincial communities had exercised from the start of the imperial period by acting as an intermediary between local and state interests; it is debatable how successful this was.

A major problem with interpreting all public building efforts as fundamentally 'public' is that treating any contribution by an individual to an urban building project as simply part of the town's public funds overlooks the personal, 'private' aspects of the donation. Yet these are unmistakably emphasized in our evidence. It is perhaps significant in this regard too that even when a public organization is noted as a building's sponsor, nearly half of the known cases specify that the town used its own money, using the same term for private money, *sua pecunia*, as was typically used for an individual's private wealth. Interestingly, it is not entirely clear what a town's 'private money' was, and it may actually refer to public funds. Still, describing a municipal building project in this way suggests that the town or its magistrates were taking advantage of their leeway in determining how 'the town' could dispose of its funds. This supports the view that, just because a town was involved, the building of a public structure was not seen by Romans as an entirely public venture. I should stress here again that I am in no way suggesting that public building in Roman Africa or elsewhere was an entirely private matter either: that view is as untenable as the idea that it was purely public. The point I am making is that the process was a complicated one involving a variety of interests, and the public/private dichotomy is inadequate for explaining the full complexity of the matter. Focusing on the person or group named as the benefactor and attempting to discern what particular motivations led that benefactor to fund a public

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rionum) to signify that official permission to build had been obtained. Unfortunately, it is not entirely clear in most cases exactly what the permission entailed, whether it was the type of structure, the placement, etc., other than that the town authorities were often involved in the building process in one way or another.

building allows for a more nuanced picture that can incorporate this intricate web of public and private influences.

Another, perhaps more vital, potential criticism concerns the nature of the evidence itself. The most substantial evidence we have for understanding how public buildings were managed and constructed, not only in North Africa, but anywhere in the Roman Empire, comes from inscriptions. These inscriptions, of course, were paid for and set up by the same benefactor behind the building project the inscription commemorated. I hope it is by now perfectly clear that the primary purpose of such inscriptions was to honor the benefactor for providing, through whatever means, a structure that served the public utility. There is no guarantee, however, that every public construction would be so honored. It may be that our evidence grossly distorts the importance of individuals in instigating building projects over collectives. It is possible, for instance, that public organisms like towns or groups of magistrates would simply be fulfilling their duty by supporting public infrastructure and so would not feel the need to boast of the accomplishment with an inscription. This would seriously undermine my conclusions about the central role played by elite individuals in Rome's public, urban infrastructure.

Unfortunately, it is impossible to get any clear sense of exactly how representative the epigraphic evidence is in terms of the type of people or group behind building projects. I should point out, though, that we likewise have no real understanding of the proportion of inscriptions which survive relative to the total number that were produced in antiquity, so it is possible that the inscriptions which do survive actually underrepresent the proportion of individuals involved in public building. More importantly, the argument for large amounts of 'silent' activity by state agents is based on a flawed assumption; public organizations did, in fact, commemorate their public building activity with dedicatory inscriptions. 24 examples survive where a town, group of magistrates, or other similar public structure is named as the primary builder and where public money is specified as the funding source. Again, the numbers do not by themselves give a perfectly unambiguous representation of the historical reality; no solid, inductive model can really be built up by looking at the evidence. Viewed the other way, however, the material sufficiently contradicts—invalidates, really—the one line of reasoning, namely that public authorities would not be represented by honorific building inscriptions, thereby lending at least provisional support for the opposite view. Clearly, then, we see that public organizations are not entirely silent in the epigraphic material, which belies the notion that their robust public building activity would not show up in our sources. Rather, it seems that these collective organizations (or, better, the individuals who comprised the organizations) sought the same recognition

for the virtuous fulfillment of duty that individuals were looking for with publically displayed honorific or dedicatory inscriptions. We must, then, trust that the inscriptions which survive do indeed represent a fairly accurate sample of the agents responsible for public building activity.

4 Urbanization and the Development of the Non-agrarian Sectors

Essentially, urban development, population growth, and expanding economic productivity all worked together—economic expansion and population growth lead people to move into cities and towns in order to take advantage of economic opportunities, including providing labor for building projects and working in urban manufacturing, or simply to relieve population pressure in the countryside (see Table 8). Growing urban populations generated a need for increased urban infrastructure which, in turn, would have spawned new opportunities for urban employment and, therefore, more growth. This is in addition to simply increasing the desirability of spending time in urban environments because of the monumental architecture and amenities which urban residents could enjoy. In general, the development of urban space and the increasing urbanization of the population generate a concentration of people who constitute a consumer base as well as a potential source of labor. Cities also allow for an agglomeration of communication routes, make gathering information or monitoring economic agents easier, and increase the efficiency of variety of activities by allowing for the pooling of resources. In short, cities typically lower transaction costs and, consequently, urban development has a tremendous impact on economic life.[27] It follows for the Roman case, then, that areas of higher urbanization—more people living in cities and more urban space overall—would receive more of these cultural, political, and economic benefits than other parts of the Empire. Indeed, the sheer scale-effects of urban centers in heavily urbanized regions as compared to under-urbanized ones can explain a good deal of the Rome's economic development during the early imperial period.[28]

27 A. Wilson 2011, 162. Urbanization is also an often used marker of economic development in pre-industrial societies, signaling a rise in the share of the population not devoted to agricultural labor and, therefore, an improvement in the output of agriculture on a per-unit of labor basis, necessary to feed the growing number of non-agricultural workers. See e.g. Lo Cascio 2009; Van Zanden 2009; van Zanden and van Leeuwen 2011.

28 An interesting contrast appears in this regard between Rome's 'world of cities' and other ancient states, including pre- and early imperial China as well as the ancient Near East

TABLE 8 *Estimates of Urban population and number of large cities in the western Empire in the mid-second century CE (with Egypt included for comparison), by region. Adapted from (A. Wilson 2011)*

Region	Estimated number of large cities (5,000–25,000 inhabitants)	Estimated urban population
Africa	53	1,029,000
Britain	13	114,000
Egypt	45	1,509,663
Gaul	22	222,000
Germany	8	76,000
Italy	28	1,547,000
Sicily, Corsica, and Sardinia	12	236,000
Spain	37	310,000

Furthermore, as discussed previously, a great deal of manufacture occurred in and near cities, as is increasingly being acknowledged by historians of the Roman economy. Urban production not only brought people into cities to work in these sectors and to purchase goods, but, perhaps more importantly, the sale of these products generated wealth for the owners of the production facilities.[29] These owners would largely have been the same urban elite who used a portion of their wealth to sponsor public building projects, or their dependents. Moreover, facilities for manufacturing goods like textiles, ceramics, dyes, fish

and India, all of which did not experience manufacturing growth nor marketization on the same scale as imperial Rome. Mauryan India as well as Pharaonic Egypt seem to have remained relatively under-urbanized at all periods, though they both did have several urban centers, and while Han China and the Neo-Babylonian Empire in Mesopotamia certainly did have substantial urban populations and saw some growth in the activities associated with cities, but again not quite on the scale of the Roman Empire. On these issues, Allchin 1995; Joseph G. Manning 2007; van Leeuwen, Foldvari, and van Zanden 2014; Jursa 2014; Lewis 2015. It is a topic for future, directed comparative study to determine the extent that urban growth and the type of cities that these different ancient states produced played a causal role in wider economic development.

29 Namely, the elite who not only owned much of the land, both rural and urban, where goods were produced, but who also controlled much of the investment capital necessary for supporting these productive enterprises.

sauce, and other goods depended significantly on utilizing urban infrastructure such as roads for transporting materials, the water supplied by wells and aqueducts, sewers and bathhouses for the health of the people involved, and similar structures. Included in this list should also be the judicial, entertainment, and ideological needs fulfilled by urban public buildings such as town council buildings, circuses and theaters, temples, etc. In this way, urban development was partly paid for by the proceeds from urban production, while this production itself benefited from the development. Elite benefactors who spent money on public building, then, saw a return on this investment not only in terms of social capital, but also as more tangible rewards such as providing the infrastructure needed by manufacturing facilities, gaining benefits such as access to new revenue streams, and supplying the cultural and religious amenities sought by urban residents and laborers. These complimentary processes underpinned the rise of non-agrarian sectors of the Roman economy, supporting the expansion of production of a wide variety of goods and services and long-distance exchange in many of these goods.

5 The Surprisingly Short Reach of the Roman State

In general, cities occupied important and unique positions for Roman political, religious, cultural, and economic development. Crucially, this urbanization was sparked in large measure by the activity of elite Romans; individuals who, it must be stressed, were inexorably linked into the public life of their communities in various ways. This is significant, because the hidden side of this story is the power—or lack thereof—exerted over local matters by the central Roman state. The dedicatory and honorific inscriptions attached to the buildings and monuments which were constructed in the public spaces of provincial towns displayed for the community offer tangible evidence that the public's needs were being looked after by their public representatives, namely elite office holders. This provides a much more complete and compelling account of the process than one which seeks to disambiguate public from private activity. What we see are individuals acting partially as private citizens, yet simultaneously as public agents providing much needed public infrastructure to satisfy the many and various demands of the cultural, political, and economic frameworks within which they functioned.

Identifying this third or middle-ground sphere, neither wholly public nor wholly private yet sharing in both, offers a key insight not just for explaining public construction, but carries also important ramifications for how we understand the nature of the Roman state. This is because there is a fundamen-

tal difference between a society in which public needs are satisfied by public authorities using public resources supplied by state extraction of the society's surplus wealth and one in which individuals assume a large share of the responsibility for furnishing public utilities using their personal wealth, even if they are at the same time public officers acting partly in their official capacity. The difference is essentially one of oversight. A public organization is, of course, subject to direct inspection by other officials, administrators, and sometimes the general public, whereas private individuals are generally free from such scrutiny. Moreover, public officials often are subject to statutes or other regulations requiring that the general public utility be a primary consideration, unlike individuals.

It is highly likely that the buildings constructed using fees and campaign promises were subject to some public oversight. The available evidence, however, provides very little positive proof of this. The main oversight exercised over public building projects as evidenced in the epigraphic material is that a town's magistrates (typically the *decuriones*, the chief town councilors) are often noted as having given some sort of approval for project as a whole, although it seems clear that the actual decisions regarding the project remained in the hands of the individuals cited as the building's chief benefactor. Even the legal sources offer very little evidence of strong state oversight. The Irni charter discussed in Chapter 2, for instance, allowed magistrates to decide to spend some of the town's public money on building or repairing public infrastructure as long as a *quorum* of at least half of the *decuriones* were present for the vote.[30] Curiously, there is nothing in this regulation about rendering accounts of how much was spent or on what exactly it was spent for public scrutiny. This makes the most sense if much of the public building was orchestrated by individuals.

Municipal governments in the Roman world certainly did have public funds collected through local taxation, fees, dues, rent on city-owned property, money loans, and other sources. If the majority of the urban infrastructure in cities was constructed by the municipal, public authorities using the town's public money, it would be possible to say that public building in the region was indeed a public venture; the inhabitants of a municipality paid, through taxes, fees, dues, and rents for the buildings, monuments, and infrastructure that they themselves enjoyed, with the local magistrates acting simply as custodians and administrators of the building projects. If, on the other hand, individuals who had no connection to public life built things in their communities entirely

30 Chapter 79 (González and Crawford 1986, 173, 194).

on their own initiative to which they granted access for the general public, then it would be reasonable to conclude that public construction was a wholly private matter, a sort of non-governmental public service. Neither of these scenarios, however, adequately explains the evidence. Instead, we see most public building projects instigated by individuals acting largely on their own initiative, but also operating as public officials.

Roman historians have long been aware that, in many ways, the imperial Roman state and its bureaucratic apparatus was actually quite small and circumscribed in its operations. Several prominent scholars in the past argued that the imperial government did not have a particularly strong hand in the daily affairs of most Roman citizens.[31] In the main, this idea refers to the very small number of government administrators who worked full-time for the state, and their rather limited role. So, the imperial government's short reach will perhaps not be surprising to Romanists. Still, it is an important point, for the full implications of the limited role of state actors for Rome's overall economic development have yet to be fully explored. Moreover, the state seems especially small when Rome is compared to other imperial states from the past. For instance, Scheidel and Friesen have estimated that the imperial Roman state's expenditure represented only about 5 % of total GDP,[32] while that of the Han Empire in China, on the other hand, is estimated to have been around 10 %.[33] Duncan-Jones also attempted to identify the different sectors which made up the imperial budget, noting that spending on the military comprised about two-thirds of the entire budget, while spending on construction projects accounted for only between 1.5 and 6 % of the budget.[34] This is quite interesting in light of the above discussion concerning public buildings in North Africa and elsewhere in the western half of the Empire. It is true, as Scheidel and Friesen point out, that citizens who lived in Italy were immune to many forms of taxation, meaning that the burden placed on the public sector in Italy was less than in the provinces, where people would have paid an above-average share of the responsibility for supplying the state revenue. Even if these figures underestimate the amount spent on buildings in the provinces to some degree, it cannot be doubted that the Roman state spent only a miniscule fraction of its revenue on public infrastructure, apart from possibly military installations. It must be remembered too that an above-average portion of imperial spending occurred in the city of Rome herself, especially for monumental constructions

31 Notably Millar 1977; Garnsey and Saller 1987.
32 Scheidel and Friesen 2009, 75.
33 Scheidel 2015b, 163–165.
34 Duncan-Jones 1994, 45.

and as salaries to state employees and dependents, which means that the other provinces were left with a lower share of the imperial budget to spend on things like public buildings than what was available in Italy.

With the central imperial state not contributing much to urban infrastructure in the provinces, this left provincial cities essentially on their own to provide public buildings and to undertake any other necessary tasks, such as paying civic employees, performing religious rites, etc. Municipal governments in areas like North Africa or Spain, however, did not have access to a great many sources of funding and were not required to provide a great many public goods or services. Certainly, the public authorities had some responsibilities, such as the upkeep of public infrastructure. The Irni town charter, for instance, contains a clause empowering certain municipal officials (*aediles*, more or less 'public works' officers) to compel the town's residents to contribute labor on construction projects that served the public utility, while another clause notes that the chief magistrates could use part of the town's common funds on public works at their discretion.[35] In practice, though, most cities did not exercise this authority to any significant degree. If they had, then we should expect to find a great deal more mention in the epigraphic material of collective organizations using public or common funds on public building projects. However, this is not at all what the evidence shows.

Instead, we mainly see individuals putting their own wealth to the public good. This is part of the prosocial culture of Rome I keep referencing. It also helped spawn what Scheidel calls the 'grand bargain' of the Roman world, implicitly made between state agents and local elites.[36] Essentially, this bargain focused on the Empire's free-floating resources. These free-floating resources are a crucial element in any society, as they are, by their nature, up for grabs by a number of different groups and their control can help support claims to positions of power and prestige within the society. In broad terms, the grand bargain of the Roman Empire allowed the imperial state to draw enough of the Empire's surplus revenue to support a monopoly over military power as well as reward associates and supporters and to subsidize the population of the metropolis, Rome. In return, local elites were given a great deal of leeway with minimal state oversight to capture a fairly large share of the remaining free-floating resources and to protect their own interests—economic, social, and political—as they saw fit. Deficiencies in municipal finances were covered to a significant degree by the elite, returning to their wider communities some part

35 Chapter 83 and 79, respectively (González and Crawford 1986, 173–175, 194–195).

36 Scheidel 2015b.

of the vast wealth they were able to capture through public largesse. This bargain very clearly fits well within the broad, prosocial culture of mutual responsibility and support that had been evolving between the different segments of the Roman population from its early days up through the imperial period.

The bargain was also certainly a good one for Rome's elites. They were allowed to amass very large fortunes by gaining control over a significant share of the Empire's free-floating resources, including its agricultural land, urban real estate, productive enterprises, and capital.[37] In fact, it has often been remarked that the Roman Empire produced some of the most unequal distribution of wealth in the pre-industrial world.[38] Without a doubt, elite Romans in every corner of the Empire benefited from institutional and social arrangements by taking a very large share of the available wealth, property, and resources that were up for grabs. To help legitimate this large and unequal wealth-accumulation, Roman elites were expected to devote only a small portion[39] of this wealth back towards the general public through the sort of civic benefactions discussed throughout this book. Here, then, we see how this all ties together: neither the central imperial apparatus nor municipal finances could support all of the activity required to sustain urban life in the provinces, leaving a gap in public spending. At the same time, wealthy, prominent Roman citizens required support from their local communities to justify and maintain their elite positions. Providing civic benefactions garnered a great deal of social capital that could be exchanged for exactly this sort of local support. Finally, competition among elite citizens for this support through conspicuous displays of benefaction helped to ensure that elites provided the necessary funding to support urban life and make up for the gap left by the imperial and local public authorities.

6 The Public Deeds of Private Citizens

In many ways, this 'grand bargain' looks to a modern, western audience as a very familiar example of small government: relatively low taxes,[40] a great deal of leeway for nominally private citizens to pursue their own economic interests,

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37 That elite citizens held the majority of Rome's agriculturally productive land is generally acknowledged.

38 Scheidel and Friesen 2009; Scheidel 2010; Milanovic, Lindert, and Williamson 2010; Hobson 2015b.

39 Zuiderhoek 2009.

40 At least those collected by the central state and paid by wealthy landowners; rents paid by

and most public works besides defense being provided by local government or contributions from individuals and groups. Rome by this reading appears as the model neo-liberal state. Yet, as I explain above, this reading does not really capture the full intricacy of the situation. For these 'private' individuals were in most cases public officials and, even though they seem to have had great freedom in their activity, as public officials and prominent citizens they still had certain obligations for meeting the public need. Moreover—and here is where the Roman world departs most drastically from the experience of, say, the modern United States—these elites who were acting at once as private citizens and public officials were constrained by very powerful, institutionalized and deeply-internalized cultural traits that compelled prosocial activity, including spending on public goods. At least, until they were not (I explain this below).

There is no sense in any of the available evidence that individuals were bound by any consideration of public utility when making choices about public building projects. There certainly was precedent in the Roman world for such a principle. For instance, we have reference to a rescript from the mid second century CE stating that when a bequest was made to a city carrying conditions which required the city to perform certain activities, the city's officials were instructed to use the principle of public utility (*utilitatis publicae*) in deciding whether or not to accept the conditional bequest.[41] This principle, however, applied only under these specific circumstances. Concerning individual contributions to public building projects, there are no hints that the general welfare of the public was to be the primary consideration. Rather, the imperial Roman state gave wealthy citizens—who were, it must be remembered, typically public officials as well—the leeway to spend as much or as little as they saw fit on civic infrastructure and to focus on the particular types of constructions with which they preferred to be associated. This view is supported by literary evidence as well. In short, elite Romans were largely unfettered in the way they pursued prestige from their communities and tried to generate social capital through the practice of competitive benefaction.

This is not meant to suggest that benefactors would typically be working *against* the public good in their decisions to donate money, to sponsor some building project, or to support the use of town funds for a particular project.

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tenants were considerably higher. In fact, the gross difference between the taxes paid by landowners and the rents paid they collected on their land was one of the primary means by which wealth became so unevenly distributed in the Empire (Hopkins 2002; Kehoe 1988, 2007; Monson 2012; Monson and Scheidel 2015). I have more to say about this in the next chapter.

41 *Institutes* 2.195.

As public officials, the individuals named in these building inscriptions would surely have been in part motivated by public utility. Indeed, a key aspect of getting recognition from the public for their generous activity and faithful discharge of their public duty was that the activity being noted in honorific, dedicatory inscriptions served the public in some way. The central point here is, rather, that this was clearly not the *only* motivation. Intra-elite competition played a role as well, with the desire for individual recognition with different projects. The other, non-official activities of these elites must be born in mind too. As detailed throughout this book, the very same people who held these municipal governance posts and were responsible for decisions about public building were the same elites who held a good portion of the material and monetary wealth of any region. Without any strict regulations restricting their decisions to public need or to align with political interests, it is entirely plausible that their 'private' economic considerations played a significant role in their decision making as well. Building or repairing a bridge is always a good thing, but it is so much more beneficial for the benefactor paying for the project when that bridge helps transport the olive oil from *their* estate to the nearest market or port.

The other crucial ramification of this system is that it relied to a significant degree on the pressures of social and political life to prompt elite citizens to spend money on public utilities. It needs to be stressed here that I am not trying to argue that all public goods and urban infrastructure in the Roman world were supplied by completely voluntary elite spending. Certainly liturgies were known, namely compulsory contributions to public service, placing explicit legal requirements on wealthy citizens to contribute to the well-being of their communities.[42] I should point out, however, that most provisions for compulsory duty involve the various ways that a person could be exempt from such services and the restrictions on exemptions. It is also possible to view the sort of compulsory office fees mentioned in previous chapters in this same light. These fees, however, were typically not tied directly to building projects under the direction of municipal officials; rather, the office-holder seems to have had considerable flexibility in the use of the fee. There was, therefore, some flexibil-

42 On these, see especially Jacques 1984; Lepelly 2001; Jaschke 2006. Arjan Zuiderhoek makes an excellent point about such compulsory service in the eastern Empire, where these liturgies were much more common, noting that "the fulfillment of a liturgy could qualify as a benefaction as easily as the apparently more spontaneous contributions modern historians usually designate with the term, especially in those cases where the liturgist spent more of his own money than law or custom required" (Zuiderhoek 2009, 11). I discuss similar situation regarding compulsory fees for entering municipal offices in Chapter 2.

ity on the individual level in how their money was used by 'public' authorities (the same authority of which they themselves were a part!).

This provision and the ability of town councils to impose liturgical duties on its citizens or to extract fees from office holders, even though in practice they seem to be little used during the high imperial period, actually serve to reinforce my central point about the precariousness of Rome's system of creating and maintaining urban infrastructure—a community's wealthy, prominent citizens could simply choose not to hold public office or bother trying to win over the local inhabitants and generate social capital through conspicuous spending on civic benefactions. This seems, in fact, to have been a major problem which plagued much of the Empire in the Late Antique period when, for a variety of reasons, office-holding became less attractive to many wealthy Romans. Consequently, civic benefactions diminished drastically while urban development halted in many areas. Rome's strong undercurrent of prosociality essentially disappeared, or at least mutated in critical ways. This view is supported by the efforts of later Emperors to force the elite to take on public service and to tie people to a specific community so that civic duties such as liturgical service could be imposed upon them.[43] Clearly, this was an effort aimed at preventing prominent political agents from giving up urban residence, thereby forgoing the obligations—whether legal or cultural—that went along with being an elite member of a civic community, precisely the obligations described throughout this work. Thus, even if the personal contributions of magistrates and other officials are considered to be public in some sense, having a prominent citizen spend part of his wealth for the privilege of holding a public office is not quite the same as a municipality or its officers drawing from a common pool of money supplied by taxation, custom dues, fines, and other sources of public revenue.

7 Aligning Interests

We see that urban spaces were critical in the political, religious, cultural, as well as economic development of the Roman Mediterranean. We see too that this urbanization relied to a large measure—more than is sometimes acknowledged—on the elite Romans competing against each other and seeking to justify their lofty positions in their provincial and local settings. These insights are important in terms of understanding the imperial economy for several rea-

43 E.g. *Codex* 10.38.1.

sons. Firstly, since urban spaces held such a prominent place in the Empire's economic life, seeing how they were built up and how the infrastructure on which so much of the production, marketing, administration, and entertainment relied is an essential part of constructing the larger picture. Secondly, exploring the significance of elite benefaction and elite's sense of 'public duty' in developing Rome's urban centers adds another important dimension to our overall understanding of elite activity and intra-elite competition. And finally, returning to the focus of this chapter, this perspective sheds light on the complex overlap between public and private in the Roman political economy, an underappreciated though fundamental component of this ancient polity.

My survey of the North African evidence focuses not on the function of buildings, nor even on the importance of urban growth as a tool of control and administration for the central Roman state. My focus is instead on what the evidence *itself* highlights; namely, which individual or group was taking credit for the building and what exactly they were trying to promote. This outlook provides a deeper understanding of the complex matrix of motivations and considerations that went in to the decision to sponsor a public building project. Moreover, it pushes us beyond trying to identify behavior in terms of a simple public/private dichotomy, offering in its place a more nuanced view of the different spheres in which people operated and the overlapping incentives that drove their actions. In sum, the demands placed on wealthy citizens from institutionalized social and political habits coupled with the fairly minor presence of the state in the municipal affairs of the provinces left Rome's elite a great deal of leeway to amass their own personal fortunes, yet at the same time their role as leaders of their communities required that they tended also to the needs of the public at large. As this chapter argues, conspicuous, well-publicized acts of civic benefaction in the form of sponsored public building programs helped to satisfy all of these aims.

Understanding the different factors that affected the management and organization of public building programs provides further insight into the way that Rome's 'grand bargain' between state and local elites operated in practical terms, affecting the path of urban development. The bargain was a win-win for the central state along with the Empire's provincial and municipal elites. Both got to keep a very large share of the free-floating resources. Many people, though still undoubtedly a small share of the total population, became very rich indeed, while Roman society as a whole was able to function: the vast and powerful Roman army was paid; temples, council chambers, markets, and statues were constructed throughout the Empire; roads and bridges were built and maintained to facilitate communication and to transport people and goods to every corner of the Empire; aqueducts brought water to the throngs of peo-

ple aggregating in these ever-expanding urban centers; and theaters, statuary, magnificent architectural feats, and public space for sharing information supported some human capital growth and allowed people in cities all over the Empire to benefit from Rome's great cultural and artistic achievements. This brief outline of the grand bargain, however, masks two essential factors. First, it makes no real mention of all of the non-elite people without whose labor and acquiescence the entire system would collapse (more about this section of the population in the next chapter). Secondly, it obscures the fact that the individuals who personally benefited from the accumulation of wealth and power allowed by this bargain and the public officials who ensured the minimum amount of goods and services were sent the other direction—to the public at large—were often one and the same.

This latter observation, in fact, seems to explain how such a mutually-beneficial bargain evolved over the years leading up to the imperial period and was able to be maintained for several centuries. For the bargain was at its core an *elite* agreement, involving the three levels of wealthy and powerful citizens in the Roman world: the top elite in Rome who filled the ranks of Emperor, Senators, and the other important central state offices; the local elites who occupied the same positions on the provincial and municipal level; and the non-politically active, but still wealthy elite who benefited personally from the arrangement. Their bargain, then, represented an alignment of interests. Understanding this alignment helps to explain not only how public works were supported, but also gives better context for understanding the other forms of benefaction mentioned in Chapter 2 as well as the way that all of this activity filtered through the socio-political process and into the economy at large, supporting all of the development in manufacturing, trade, and marketization noted in Chapter 3. Crucially, the bargain was as strong as it was and lasted as long as it did only because it worked reasonably well for everyone. This includes the other side of the deal, namely the general population. In the next chapter, I focus on how the needs of the wider Roman public were met, tackling along the way the very thorny issue of economic growth.

CHAPTER 5

Measuring Economic Performance beyond GDP: Economic Growth, Income Inequality, and Roman Living Standards

In the preceding pages, I surveyed some important material evidence in order to test different alternative accounts of how the western imperial economy functioned. This evidence supports a reading of Rome as an active, fairly advanced economy, at least by the standards of other pre-industrial societies. The Roman economy featured a great deal of trade, manufactured items, a sophisticated monetary system, and advanced financial institutions. I explained how taking a close look at the evidence reveals that a considerable amount of capital, including credit, circulated in the economy. This helped supply the investment capital needed to expand production of the various consumer goods which circulated throughout the Empire. Chapter 4 brought all of this together, highlighting the complex mix of political, economic, and cultural incentives that were driving much of this activity. I hinted at various points also at the role played by non-elite actors, Rome's 'regular' people, and the wider effects of the Roman economic system on the overall prosperity and well-being of all its citizens. This all seems to be pointing us in one clear direction, namely toward the question of whether or not the Roman Empire experienced a period of real economic growth that touched all people living in the Empire. I have noted this in places throughout the previous chapters, and it is now time to treat to the matter explicitly.

The question of economic growth is in fact one of the most often treated, and hotly debated, issues in Roman economic history today. This largely revolves around the nature of growth, for it is generally acknowledged that economic activity overall swelled in the greater Mediterranean basin during Rome's imperial expansion. The question, then, is whether growth was *intensive*, namely an actual net increase in output per capita, or merely *extensive*, in other words that the increase in output was matched, if not surpassed, by population growth, meaning that the per capita productivity remained stable in the long run. Although the question of growth has occupied a great deal of scholarly attention, it is actually not my intention to try to resolve it or even add to the discussion here. This is for two reasons. Firstly, the available evidence is simply not quite adequate to support the sort of fine-grained quantitative data that would

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be required to resolve the question one way or the other.[1] In other words, while scholars have developed very sophisticated and compelling estimations for economic output, typically as something like a GDP calculation, as well as population estimates, these are just that: estimates. The evidence on which these calculations are based is extremely scant, leaving unknown margins of error and undermining conclusions about whether growth was intensive or extensive. Furthermore, the temporal resolution on such estimates is very coarse, as typically evidence produced from disparate times over the course of a century or more is needed to make one estimate, due to the sparse nature of the material. This makes it extremely difficult to ascertain precisely when spikes in output or in population occurred, meaning that it is nearly impossible to tell if there was any period of time when the former, but not the latter, occurred—i.e. intensive growth.

The second issue is that measures of output—GDP or GDP/capita—are no longer thought to be the most important or representative measures of economic performance by economists and political theorists. It is true that for a long time GDP was *the* measure of performance, used to judge the success or failure of societies both modern and historical.[2] Organizations like the World Bank, International Monetary Fund, Organization for Economic Co-operation and Development (OECD), among others, have and continue to use GDP as the chief single measure of performance. It therefore made sense for economic historians, including Roman specialists, to concentrate on finding equivalent measures for historic societies. Finding Roman GDP would allow scholars to fit their models of this ancient economy into the wider picture of economic development from antiquity to the modern day, as well as benefit from the insights of modern economic research in seeking to understand the Roman case. Yet economists are increasingly coming to realize the weaknesses of these output-based approaches.[3] Chiefly, this involves the fact that GDP, even when calculated on a per-capita basis, says nothing about the actual *distribution* of this output. GDP masks the level of inequality in income, confounding the importance to the economy of output level with the potential impact of the distribution. Furthermore, GDP does little to indicate how well off people actually are, which includes not only their material comforts, but also the level of health, knowledge, entertainment, and social support attained. In its place, scholars are beginning to focus on a bundle of different, related measures to

1 Erdkamp 2015a offers an interesting recent discussion of these issues.

2 Coyle 2014 provides a useful summary of the concept of GDP and its uses.

3 The famous report by Fitoussi, Sen, and Stiglitz 2009 highlights the shortcomings of GDP calculations.

calculate the *well-being* of different segments of a society, including things like wages, education, health care provision, and various sorts of infrastructure and public goods support. This research is having a tremendous impact on economic research and development studies, even compelling the OECD to focus its efforts on developing alternative, more inclusive measures of a successful economy.

Many economic historians still concentrate on GDP, which has unquestionably led to many important insights, but this focus does obscure the broader picture of Roman economic performance and, most importantly, well-being. In this chapter, I examine the issue in some detail in order to pull out what is important in the search for Roman GDP from what is unknowable or simply less meaningful. I then turn my attention to a brief exploration of Roman economic success from a *well-being* standpoint, concentrating particularly on the development and support for public goods as a key component of Roman welfare beyond measures of purely economic success. My aim with this chapter is both to use this perspective to reveal some interesting and original aspects of Rome's overall economic and social functioning, as well as to make this Roman material available and digestible to scholars from outside of Roman history. This will lead the way, hopefully, to much more future cross-cultural work involving ancient economic history.

1 Real Growth in the Pre-modern World? Debates, Controversies, and Confusion in Roman Economic History

The study of economic matters has been at the forefront of Roman History for a few decades now. This renewed interest began in the 1980s with the goal of debunking the old 'Finleyan', primitivist view that all ancient economies were stagnant, entirely agrarian, underdeveloped, technologically inert, and isolated from market activity. Most recent work in the area, accepting the basic idea that Rome's economy expanded in at least some ways and at certain points in time, concentrates on defining the nature and extent of this expansion. This has led to an intense and ongoing debate over economic growth, which, as mentioned above, mainly revolves around estimates of GDP and population levels at various points.

What is interesting about the debates is that the fact of economic *expansion* during Roman rule (essentially from the mid Republican period in the second century BCE through the high imperial period at the end of the third century CE, if not beyond that) is no longer questioned. Nor is the basic process of this expansion: during this period, Rome saw a massive increase in resources

in the form of labor (servile as well as free), material, and land due to the conquest of territory all around the Mediterranean basin; the cultural, political, and institutional unity brought by Rome's imperial expansion facilitated trade and exchange; increased market activity and growth in material wealth created the necessary demand along with the incentives needed for investment in high-output agriculture, especially cash-crops, as well as manufactured goods; finally, this all led to a great degree of labor specialization and an increased share of the non-agricultural sector as a percentage of the labor force and of total output. All of these features were discussed in previous chapters. Yet, the wide acceptance of this general picture has not resulted in anything close to a consensus on the issue of what expansion meant for the overall productivity of the imperial Roman economy. In other words, the question of whether there was ever true, intensive economic *growth* in the Roman world or not rages on. This stalemate, as well as the interest that the topic holds for scholars, is evidenced by the fact that the many recent works of Roman economic history devote a great deal of space to the issue, reaching very different conclusions about whether there was real growth at all, if so when did it occur, and how expansion affected different segments of the Roman population.[4]

In essence, the divide separates those following a Malthusian model from those who stress the remarkable productivity evidenced by Rome's material remains. The Malthusian picture, discussed briefly in Chapter 3, holds that growth in pre-industrial economies is constrained by high population increases and low gains in productivity. In other words, the idea is that any gain in overall productivity was 'eaten up' by concomitant population growth, resulting in aggregate growth in the amount of goods and services produced, but no real per-capita increase.[5] On the other side are those who see moments when the gains made in production actually outpaced population growth enough to conclude that real growth had occurred, at least temporarily.[6] The debate revolves, then, around two key measures: the overall economic output of a given area at a given time and the number of people living in that area at that time. Overall output has traditionally been taken to mean something like GDP, with most scholars taking this as the indicator of economic performance *par excellence*.[7] This makes sense, as this has been for a long time the favorite

4 Hopkins 2002; Jongman 2006; Kay 2014; Erdkamp 2015a; Kehoe 2015; Hobson 2015b.

5 Most notably Scheidel 2009d; Scheidel and Friesen 2009; Temin 2013.

6 Hitchner 2002; A. Wilson 2009b; Kay 2014; Erdkamp 2015a; Kron (forthcoming).

7 It is worth pointing out that studies of historical climate and environment should be able to shed some light on this as well, for the amount of agricultural goods that can be produced in a given area depends to a large extent on the climate and environment. Not only this,

measure of output by economic historians working on more recent, better document societies as well as contemporary economists, although, again, this consensus is beginning to falter. Thus, the 'economic growth in the Roman world' debate which has become such a hot-button issue in recent years has focused almost entirely on constructing estimates of Roman GDP for different periods of time and covering different regions—the Empire at its greatest extent in the second century, the late Republican polity, just Italy, etc.

Sometimes Roman GDP is measured at the expenditure- or output-side, taking estimates of the size of the population, a rough calculation of subsistence (the mean caloric intake per person needed to sustain life, usually expressed as an amount of wheat), and adding some price level for wheat to get at a value (normally in *sestertii*) for the total and per-capita output. Other scholars follow the income- or supply-side, estimating different median levels of income for different segments of the society, or estimating the amount of wage labor used in the Empire plus an average or median figure for wage levels and combining these with estimates of the amount of revenue generated by taxes and rents on property.[8] Due to the very scanty nature of the evidence concerning Rome's economic performance, though, scholars are only able to arrive at very broad estimates—educated guesses in many cases—for any one of these figures, based on many layers of assumptions. For instance, we have only a handful of reliable references to the price of wheat, a necessary multiplier for calculating the monetary value of the wheat consumed by the Roman population. These references are, moreover, scattered in place and time and notoriously disagree with each other. Scholars make complicated arguments to dismiss one or more of the references in favor of the others, but it amounts to a choice or calculating a loose range of values in order to get from how much wheat it is assumed Romans consumed to what the GDP would then be. The same uncertainty and want of dependable information holds also for measures of the size of the Roman population at different moments in time, levels of state expenditure, income levels for different segments of the population, the amount of people in any category of the social hierarchy (i.e. how many 'elites' there were

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but climatological events successive droughts, for instance or other disasters like plagues can significantly reduce populations in certain areas, which of course dramatically changes per-capita output even without any actual change in the total productivity. There has not been a great deal of work trying to link these factors together explicitly in studies of ancient economies, though some have made some preliminary remarks on the issue. See notably Ludlow and Manning 2016; J.G. Manning (forthcoming); Scheidel 2002.

8 Exactly how much these estimates differ and what this implies for our understanding of Rome's economic performance overall are not immediately clear, though I treat this below.

and what their share of the overall income was), how much wage labor was used and the wages paid for different types of work, etc. Furthermore, any single piece of evidence that we do have refers only to a very specific circumstance,[9] so any estimates that take into account multiple sources have to extrapolate in order to reach holistic values for the whole Empire or a specific region at a given range of time, and the process for making such extrapolations is likewise contentious and differs between each scholar.[10] In short, nothing about this whole process is particularly clear.

Table 9 highlights some notable estimates of GDP, the general area and timescale they are meant to cover, and the type of calculation used. What stands out when all of these estimates are put side-by-side is both how different, but also how similar they are. Different methods are used, different time-periods are focused on, and different ways of extrapolating the estimates into a single GDP figure or range are taken, but despite this, both in terms of overall and per capita GDP, the results are not grossly out of line with each other. Scheidel and Friesen's work illustrates this well, as they follow the methods of previous scholars, with some amendments, to get plausible ranges from the output-side and then compare this to plausible ranges taken from the income-side, noting the "broadly convergent nature" of the different figures. This same sentiment holds for the overlap between ranges of plausible values offered by the different scholars. What this leaves us with is that for the high imperial period covering the first 150 years or so CE, we get a range of overall GDP between Hopkins' and Temin's low count of roughly 10 billion *sestertii* to Goldsmith's high figure of over 20 billion, twice as much. Furthermore, the estimates for the population of the Empire at its height tend to fall between 50–70 million people, giving us per-capita *sestertii* figures between Hopkins' 153 and Goldsmith's and Lo Cascio and Malanima's 380, which is a difference of almost 2.5 times. Similar results are given when Rome's output is converted into Geary-Khemis dollars, a standardized hypothetical currency used by modern economists to make comparisons between different states. These values range from roughly 610 to 1,000 GKD per capita, a difference of only about 1.5 times.

9 A notable example is that one of the standard prices of wheat used by Roman economic historians—3 *sestertii* for 6.5 kg—is taken from one reference in the work of the Roman historian Tacitus concerning the price at Rome as of the great fire of 64 CE. Tacitus *Annales* 15.39.

10 Scheidel and Friesen 2009 offer the best survey of the different sources of GDP estimates and the many problems associated with them.

TABLE 9 *Different estimates of Roman economic productivity*[11]

Author	Productivity estimate	Time / area	Type of calculation
Hopkins (1980)	8,244–12,500 mil. HS; 153–225 HS/capita	~ 200 BCE–400 CE / Empire	Expenditure-side
Goldsmith (1984)	20,900 mil. HS; 380 HS/capita	first c. CE / Empire	Expenditure-side
Goldsmith (1984)	380 HS/capita	first c. CE / Empire	Income-side
Maddison (2007)	16,720 mil. HS	first c. CE / Empire	Multiple
Lo Cascio and Malanima (2009)	380 HS/capita; 1,000 1990 GKD/capita	150 CE / Empire	Income-side
Lo Cascio and Malanima (2009)	534 HS/capita; 1,400 1990 GKD/capita	150 CE / Italy	Income-side
Scheidel and Friesen (2009)	~20,000 mil. HS (between 14–23,000) mil; 260 (200–328) HS/capita; 610–700 GKD	~first-second c. CE / Empire	Multiple
Milanovic (2010)	631 1990 GKD/capita	14 CE / Empire	Income-side
Temin (2013)	ca. 10,000 mil HS; 140 HS/capita; 1,000 1990 GKD/capita	~first-second c. CE / Empire	Income-side
Kay (2014)	971 mil. HS; 193 HS/capita	150 BCE/ Republic	Multiple
Kay (2014)	2,468 mil. HS; 279 HS/capita	100 BCE/ Republic	Multiple
Kay (2014)	3,758 mil. HS; 331 HS/capita	50 BCE/ Republic	Multiple

All of the Roman GDP estimates presume, by necessity, much about the structure of the Roman economy: the relation of Roman output to early modern European countries, the productivity of agriculture, the importance of wage labor along with levels of wages and prices, the share of non-agrarian output, and many other crucial economic features. Furthermore, the different numbers devised are themselves in large part based on specific views about the nature of the Roman economy as a whole. Scholars who look at GDP from the expenditure- or output-side, for instance, base their calculations on assumptions about what mean subsistence levels in wheat equivalents would have

11 GKD = 1990 Geary-Khemis dollars. Geary-Khemis dollars are set to have the purchasing power equivalent of one dollar US in 1990. This is used to normalize the actual value of goods and services across countries with different valued national currencies, used for comparing GDP measures and other economic indicators.

been, make assumptions about how much wheat above this subsistence minimum different segments of the population had access to and roughly how many people were in each segment, then take scattered references to different prices of wheat to come up with a reasonable range (typically 2–4 *sestertii* per *modius*, which was a Roman dry measure equal to roughly 6.5 kg of wheat). Deciding what reasonable levels of consumption were for different segments of the population, though, is quite problematic and often left fairly opaque in these works. Moreover, this often admits some circularity, as the range of how much above subsistence Roman inhabitants lived tends to be determined based on *a priori* assumptions about pre-industrial economies and Rome's relation to later, early modern European states. Income-side calculations are much the same, as information on wage levels is just as scattered and incomplete as wheat prices, plus measures of state income or the income of elites from property ownership are calculated with similar rough assumptions as consumption-level estimates.

The different methods used, the number of assumptions that go into the calculations, and the ranges of values settled on allow for, if not encourage, quite disparate accounts of the nature of the Roman economy. For instance, if Hopkins' rather pessimistic figures are taken, then Rome looks like a very stable, but low performing state from the later Republican period all the way through the High Empire. Likewise, Scheidel and Friesen's estimates are roughly in line with Hopkins' and suggest a rather stagnant imperial economy. Furthermore, their calculation of 610–700 GKD per capita for the Empire puts Rome's productivity comfortably above subsistence and on par with other middling states in Medieval Europe, but nowhere close to the high-performing early modern economies of England and the Netherlands during the 17th and 18th centuries.[12] In contrast, the high estimates Lo Cascio and Malanima of 1,000 GKD/capita for the Empire as a whole puts Rome near early modern northern Europe, and their calculation of 1,400 GKD/capita for Italy alone during the height of imperial power in the second century puts Rome alongside 17th-century Holland and England as one of the most productive economic regions in the entire pre-industrial world.

12 The per capita income needed to purchase enough goods to support subsistence is usually put at around 300–400 GKD (Maddison 2001; Milanovic, Lindert, and Williamson 2010). Values of 600 or more GKD, thus, suggests a per capita GDP of at least twice subsistence. By contrast, GDP in England by the end of the 17th century has been estimated at over 1,400 GKD/capita, over 2 times Scheidel and Friesen's estimate for Rome (Maddison 2007).

Without question, work on the issue of Roman GDP has uncovered a wealth of information about Rome's economic performance and offered many novel ways to view the shoddy nature of our evidence. It is clear that scholars have scoured all available evidence in their quest to quantify GDP and have, as a result, come up with very reasonable, plausible estimates. These estimates are based on a myriad of assumptions, albeit equally reasonable and plausible ones. The problem comes in trying to combine these scattered, spotty references to different economic features—wages, prices, consumption patterns, etc.—into a single measure of performance: GDP. Each calculation of the different measures that go into these GDP figures is based on incomplete evidence that must be extrapolated out to a wider area, and typically involves making a fairly broad estimate. Each estimate, then, contains an unknown (and undefined) margin of error. When these estimates are put together, then, the errors in effect compound leaving the wide margins of plausible values that we get. The only conclusion that can be reached from all of this is one of confusion; a variety of different estimates of different types of economic indicators have been put forward, leading to different figures for Rome's overall output, which has led to a sizeable but not improbable range between estimates, the upper no more than 2.5 times the lower. This is not meant to raise doubts about the plausibility of the figures themselves or even the assumptions that went into them. Nevertheless, the ranges given in this scholarship pose one crucial question: what can we make of all of this work in terms of deciding whether Rome ever experienced any real, intensive growth? The answer is, I think, actually very little.

The problem actually arises in part *because* the different estimates are so convergent. This convergence has led to widespread agreement about the plausible ranges, yet these ranges and the presumptive error margins on different assumptions are wide enough to support conflicting interpretations. As I detail above, the question of growth hinges on the specificity of the related calculations used to track change in per capita output: some figure of overall productivity, in whichever way it is measured, the size of the population, but also the temporal values and geographic coverage assigned to each calculation. These latter values are crucial, for it is necessary to define precisely to what point in time the population and GDP measurements refer along with how large of an area they cover in order to determine accurately whether per capita GDP in place *a* at time *x* was higher, lower, or equal to per capita GDP in place *a* at time *y*; namely, if there was growth over time. The difficulty in interpreting the GDP figures that have been offered is that they cover slightly different areas and time periods; from Hopkins' rather wide range of the entire Roman state from the mid-Republic to the end of the imperial period, to more constrained

timeframes such as the first century CE used by several scholars, and even Lo Cascio and Malanima picking out 150 CE as their exemplary moment in time, plus some attempt to estimate the difference between Italy and the rest of the Empire.

This leaves the issue of growth very uncertain. Scheidel and Friesen, for example, give very well-reasoned, convincing arguments for accepting their figure of 260 *sestertii*/capita during the early imperial period, but does this represent intensive, per-capita *growth* from earlier periods? If we accept Hopkins' estimate for the Republican period, it certainly does, but not if we take Goldsmith's figure. The question itself confounds the fact that the size of the Roman state changed dramatically between the second centuries BCE and CE, as imperial Rome had access to many more resources than its Republican counterpart, even taking the per capita figures. And if there was growth during the early Empire, what happened after the second century CE? Did growth continue, did the economy stagnate, or was there economic contraction, leaving the first two centuries CE as a high-performing outlier? It is possible, therefore, to take all of these Roman GDP numbers and conclude that GDP/capita remained within a consistent range across the mid-republican to high imperial periods (second century BCE to at least third century CE), thus there was no real per capita growth, or these same estimates can be used to claim that there was a brief moment of intensive growth in GDP/capita during the course of the first two centuries CE. Furthermore, when the estimates for the Empire are combined with work on the Republican period, it is clear that readings of stagnation, growth in the early imperial period only, growth in the Republican period followed by an imperial downturn, or continual growth throughout the two eras could all be supported. Indeed, all of these conclusions have found support among Roman economic historians in recent years. This is, I think, the main reason that we are currently in the rather odd situation of having general agreement over the range of production and population at different points in time, yet a seemingly intractable dispute over how to interpret these ranges of plausible values in terms of the question of real growth.

2 Proxy Evidence: Extrapolation or Hypothesis Testing?

This pessimistic account of ancient GDP calculations is not meant to downplay the significance or achievements of this work; the scholars discussed here have contributed much to our overall understanding of the Roman economy, drawing out clearly the limits of our evidence and defining the plausible limits of output for different aspects of the economy. And many of these scholars very

knowingly clarify the nature of their calculations, noting explicitly that they are estimates built on assumptions and need to be treated with appropriate caution. Scheidel and Friesen (2009) do this succinctly, stating:

> Students of the Roman world who are unfamiliar with our approach might be tempted to dismiss this project as a tangled web of conjecture. We would agree with this definition but urge our audience to focus on the web's texture. Our reconstruction is in its entirety a matter of controlled conjecture: undeniably conjecture, given the paucity of 'hard' data, yet tightly controlled by the interdependence of different assumptions and the constraints imposed by comparative evidence.
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> p. 63

This is certainly a fair point and applies really to all of the scholarship discussed here concerning ancient GDP calculations. Still, even accepting these provisos, it is very difficult to see what exactly is the added value of the numbers produced by these works over simply detailing the assumptions and conjectures, Scheidel and Friesen's 'web texture'? How precisely can we advance our understanding of Roman society, or use these numbers to reveal something new and interesting about Rome's economic history? Again, the main benefit of adducing absolute figures for the level of population and total performance (whether measured as expenditure, income, or otherwise) is to determine whether growth was intensive or extensive relative to other periods. Yet, this determination is undermined by the necessarily hazy and conjecture-filled process that it takes to arrive at precise figures, leaving the questions essentially unanswerable.

In fact, the most interesting and useful aspect of most ancient GDP research may actually lie in the discussion of the evidence, however sparse this may be. Scholars of Rome's economic history have brought up various proxy measures in order to derive the estimates and assumptions upon which their calculations of GDP are based. For instance, Wilson has recently reevaluated evidence of shipwrecks known from the Mediterranean, tallying the numbers to show a steady increase in the number of wrecks from about 600 BCE to 600 CE, with peaks between 200 BCE and about 50 CE.[13] This is an imperfect figure, though still quite a useful proxy for trade, under the reasonable assumption that the more overseas exchange that occurred, the higher the chance for ships to be wrecked and, thus, the more shipwrecks we will find. Wilson's numbers show a

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13 Wislon 2009, 242.

strong rise in shipwrecks during Rome's ascent to geopolitical hegemony in the later Republican and early imperial period. Other proxies include cataloguing references to wages or prices for different goods at various places and points in time, exploring the archaeological evidence of manufacturing centers to get a sense of the scale of production for ceramics, oil, and other goods, or collecting scattered details about the financial commitments of the Roman state or the different sorts of specialized professions. All of these proxy measures and the discussions surrounding their use contribute much to our overall understanding of the economy. As I outlined in the Introduction, proxies can be a very powerful means to uncover the dynamics of various aspects of the economy.

For instance, say we explore the archaeological remains of ceramic production centers in Africa Proconsularis. Even if this material does not permit us to establish a reasonable figure for Roman GDP, it is nevertheless important to detail how this production rose throughout the early imperial period and to combine this with other material, for instance evidence showing a simultaneous rise in the number of African ceramic goods winding up in the eastern Mediterranean. Together, this material acts as an approximate measure of aggregate growth in productivity and the expansion of trade from the African province. This is because if there were growth in the region's production of certain agricultural goods, especially oil and wine, and if this growth spurred an expansion of overseas trade in these and other goods, then this would result in a greater demand for ceramic goods to be produced in Africa as well as a greater amount of these goods being recovered from archaeological projects elsewhere; thus, evidence for these two latter phenomena allow us to infer the existence of the former, or in other words provide proximate support for the notion that productivity in and trade from Africa Proconsularis expanded in the first two centuries CE. Crucially, this is exactly what we see in the evidence.[14]

In this way, proxy evidence has the potential to illuminate many aspects of Rome's economic functioning, from the nature of trade and exchange, to the dynamics of marketization and monetization, to estimates about the rate of urbanization and division of labor. Much of this work has indeed been done[15] and I have explored this type of evidence throughout this work to reach conclusions about the structure of the imperial economy. Often, however, the proxies adduced in Roman economic history serve merely as fodder for extrapolating from scattered evidence to construct aggregate measures,

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14 On the expansion of the African ceramic industry, see notably Mackensen and Schneider 2002; Mackensen 2004; Bonifay 2004; Fentress et al. 2004; Bes and Poblome 2009; Hobson 2015b.

15 Notably Lo Cascio 2009; Scheidel 2009a, 2009d; A. Wilson 2009b.

such as devising the numbers that make up GDP calculations. Proxy material is really most useful, though, when used to test alternative hypotheses against each other. Unfortunately, the contrasting claims about intensive versus extensive growth both find support from the numbers that can be generated from the proxy evidence, so we are again left with this intractable situation.

This brings me back to the second major critique about this line of research that I noted at the beginning of the chapter. Even if we were able to gain more accurate and fine-grained geo-temporal measures of output, it is not clear that this would actually tell us what we want to know about the Roman world. As mentioned, economic theory and development studies in general are increasingly moving away from using GDP to measure performance, and for good reason. GDP is at best is a measure of the total value of goods or services produced by a state. Such a figure reveals nothing about what these goods and services are, how they get made or distributed, who gets access to what, or how this total output interacts with other important markers of 'performance', whether economic, political, social, etc. Even when phrased in per capita terms, the actual distribution—namely, how equally wealth in the society is distributed among different segments of the population—is entirely opaque. For these reasons, a battery of complimentary measures of performance are being developed in place of GDP. These seek not to tally total economic output or the market value of goods and services, but to uncover as best as possible the well-being of a society's inhabitants.[16]

These innovative works evaluate economic well-being, typically measured by some form of output measure (including per-capita GDP), though balance this with different measures of how this wealth ends up being dispersed within the society. For it is the *distribution* that offers real insight into the ways that different segments of a society's population actually benefit from any gains made in economic productivity. This means more than merely how much money different people have, as it is equally important to assess the different access that people have to various goods and services. These goods, services, and other attainments are what determine peoples' actual living standards, including not only material essentials like food, clothing, and shelter, but also more intangible goods such as education, health and longevity, security from violence or predation, and freedom from persecution or exclusion

16 See for instance the ClioInfra project https://www.clio-infra.eu/. Notable recent articles following this basic approach include Bolt and Bezemer 2009; Foldvari and van Leeuwen 2014; Boix 2015; Lucassen 2016.

based on gender, race, ethnicity, etc. These factors are becoming the hallmarks of well-being and go far beyond simple calculations of total economic output.[17]

This is precisely what is needed in Roman history to move past the intractable disputes over growth fomented by GDP-based studies and to link scholarship on the Roman world with the work being done by economic historians on other societies, both pre- and post-industrial. Admittedly, uncovering and dissecting evidence for all of these different indicators of well-being is a monumental task that will require much ongoing effort by historians in the coming years. Certainly, it is beyond the scope of this chapter alone. It is nevertheless worthwhile here to offer a very brief survey of some of the ways that this perspective focusing on well-being over output can aid in our understanding of the imperial Roman economy generally.

3 Rome's 99%: Economic Capacity and the Distribution of Wealth

While I have been fairly critical of Roman economic historians for their focus on devising numbers for per-capita GDP levels at different points in time, this work has made positive contributions to the field. In addition to compiling and defining the limits of the available evidence concerning issues of economic performance, this scholarship has managed to attain a virtual consensus about the level of this ancient economy. It is now nowhere doubted that the overall scale of economic activity in the Mediterranean basin and northwestern Europe expanded dramatically during the course of Rome's imperial expansion and consolidation, even if the precise quantification of that expansion eludes us. Furthermore, the Empire was unquestionably able to unite a vast territory, to furnish a great deal of production and exchange of numerous agricultural and manufactured goods, to facilitate marketization and urbanization, and to support a very large population, somewhere in the range of 50–75 million people. Even if this output did not result in a spectacularly large *per-capita* level of

17 A few ancient historians have taken note of this. Scheidel 2010, for instance, explores living standards in pre-industrial societies as opposed to just output, although he has written much about Roman GDP as well. Similarly, Kay 2014, 7 states eloquently that "The importance of economic growth lies in its contribution to the prosperity of a community or groups within a community", although the focus of his work is on the expenditure and income of the Roman state and wealthy elite in an attempt to uncover the scale of Rome's economic output in the later Republican period, and not a study of Roman living standards or well-being generally.

income or of GDP, it was certainly an achievement in its own right to reach the aggregate level of output needed to sustain these millions of people.

If per-capita GDP in the Roman world is something of a red herring, what then can we do with our understanding of the Empire's overall economic capacity? To put it another way, a fruitful avenue of future research will be to explore how Rome's economic output—along with the institutional and cultural structures that underlay it—translated into quality of life for different segments of the imperial population. One of the main indicators of this is how evenly the rewards of this capacity were distributed. This has become a focus of much current economic theory and of research into global development, with scholars seeking to understand essentially the degree of economic equality in a given society. The thinking is, as mentioned above, that measures of GDP can, at best, present a picture of how much is created, or how much wealth there is in a state. But the way that this wealth is distributed makes an enormous difference for the livelihoods and well-being of a society's inhabitants; a very prosperous and productive state, with a high per capita GDP, can still remain underdeveloped and unable to advance the well-being of the majority of its population if the rewards of this high productivity remain in the hands of only a small minority. This is, essentially, the 'top 1%' problem that has become the hallmark of calls for economic and social justice in the modern world.[18] But was there a 1% in Rome, holding the vast majority of economic wealth, while the other 99% of the population toiled in poverty? Or is such a stark disparity in income distribution more a product of our industrial, capitalist economies, so that ancient states like the Roman Empire saw a much more even spread of their more limited economic rewards?

What we really want to know about the Roman Empire, then, is not only as much detail on the level of overall output as the evidence allows, but also to get some sense of the distribution of wealth and levels of well-being. The clearest measure for the former is looking at income distribution. A few Roman economic historians have in recent years treated this issue directly. Unfortunately, as with studies of Roman GDP, the evidence concerning distribution is sparse and does not allow for very precise numbers to be calculated. Consequently, there is much disagreement in this area as well. Some scholars assert that the expansion of Rome's economic capacity in the early imperial period resulted in an increased standard of living for nearly all Romans.[19] This is largely due,

18 See e.g. Piketty 2014; Atkinson 2015 for forceful recent discussions of the ills of large disparities in wealth distribution.

19 Notably Lo Cascio 2009; Erdkamp 2015a; Kron (forthcoming).

they argue, to expanded production in a wide array of goods, increased trade and exchange of these goods meaning that more people had access to more things, and a growing urban population who were able to work for reasonable wages—thus relieving population pressure and underemployment in the agrarian sector by offering work to 'surplus' people—as well as access to the sort of services only available in cities. It has also been suggested that Rome saw an increase in labor specialization, especially in urban manufacturing, which is a very important element in human capital growth, as it increases the level of output per unit of labor, leading to productivity growth without the sort of technological advances seen during the industrial revolution.[20] Whether or not this led to a greatly increased knowledge premium—namely, the ability for workers with useful knowledge to demand larger wages compared to less skilled workers—is not entirely clear. It does, however, help to explain Rome's overall output gains during the early imperial period. Some are now even suggesting that the gains made from the rise of market-oriented production and in the growth of the small tenant farmer created a true 'middle class' of Romans with a comfortable and secure level of income and access to consumer goods and services, neither part of the rich landowning elite nor the large numbers of poor who lived barely above subsistence.[21]

Others, however, argue that the growth in overall output did not translate into any substantial increase in income nor living standards for the majority of the population.[22] This again relates to the different views of economic growth, for these scholars see economic gains as 'eaten up' by population growth, with the argument that, overall, most people had roughly the same access to the same amount of goods and services after the late Republican or early imperial growth as before. Similarly, they contend that advances in the Roman economy were largely captured by the landowning elite and that this increased wealth did not 'trickle down' in any meaningful way to the poorer segments of the population, whether these advances be increased trade, growing marketization and monetization, or the expansion of more profitable forms of production with investment in high-volume, specialized manufacture of var-

20 This is known as 'Smithian growth', after economic theorist Adam Smith. See Goldstone 2002 for an excellent explanation of the notion and its application to European history. Erdkamp 2015b offers support for the existence of this type of growth in the Roman world. The precise rate of labor specialization in the Roman world, however, remains to be properly quantified and compared to other pre-industrial states; an important task for future research.

21 Erdkamp 2015a; Kehoe 2015; Kron (forthcoming).

22 Scheidel and Friesen 2009; Scheidel 2010; Kay 2014; Hobson 2015a, 2015b.

ious goods. Scheidel and Friesen, for instance, find that the wealthiest 1% of Romans in the early imperial period controlled roughly 16% of the Empire's total wealth, a staggering number (though lower than the roughly 40–50% controlled by the modern United States' top 1%[23]). This is the same conclusion reached recently by Hobson, who studied the expansion of market- and trade-oriented production in Roman Africa. He argues that the great amount of wealth created by this increased productivity served only to reinforce the stark disparities between the landowning elite and the rest of the population.[24] In this reading, landowners captured the bulk of the rewards from the marketable surpluses produced on their estates, in contrast to the view of Kehoe and others who argue that tenancy rights in the Empire allowed both tenant farmers along with the landowners to benefit financially from investments in surplus production. Furthermore, Scheidel elsewhere finds evidence that wages for unskilled labor, which is an excellent proxy for the overall level of income distribution, tended to hold steady at a fairly low level throughout the imperial period.[25] This evidence strongly suggests that there was not a large gain in wealth by non-elite Romans during this time, in spite of gains made to overall productivity and perhaps some advance in the wealth and size of the 'middle class'. Certainly, nothing like the rosy picture painted by some scholars.

The other key issue is well-being. One important aspect of living standards is biological well-being. This generally refers to the health and longevity that people can, on average, expect to enjoy. This is a very important and growing area of economic history research, typically exploring proxy measures including median and mean life expectancy, average height, osteological evidence of disease, and differences in these measures in terms of gender, social class, etc. A few Roman historians have taken up the challenge of assessing anthropometric data for the Roman world. Geoffrey Kron, one of the most active scholars in this area, surveyed 49 separate archaeological studies that uncovered bones of Roman men who died in Italy between 500 BCE to 500 CE. Taking measures of diagnostic bones from 927 skeletons, he finds that the average height of Italian males during this long period was 168.3 cm, or about 5 feet 6 inches.[26] To put this into perspective, Kron notes that this height actually surpasses some modern figures. An osteological study of Greek males born between

23 Piketty 2014, 23.
24 Hobson 2015b, 2015a.
25 Scheidel 2010.
26 Kron 2005b, 72.

1927 and 1945, for instance, shows an average height of 167.17 cm,[27] almost a full cm shorter than Romans in ancient Italy. This suggests that Romans were able to attain a relatively high amount of nutrition and health, even by fairly modern standards. There are, however, some issues as to how representative the sample used in such studies is, and taking samples from a thousand-year period does little to answer questions about growth or development *during* the Roman period, about changes from the Republican to imperial period, and similar questions. Indeed, a compelling recent article takes a smaller but more targeted osteological sample—mostly female sub-adults—to argue that the average heights reached by females at different stages of development, from childhood through puberty, indicates that "Roman female populations share anthropometric similarities with unhealthy modern populations at the time of adolescent growth .... [T]he anthropometry of Roman skeletal samples is broadly correlated with that of unhealthy populations during the first eighteen years of life".[28] In other words, a more selective sample of Roman skeletal evidence looking for a specific pattern of development in females, rather than the overall average height of a large sample of male skeletons from a long time period, suggests that the typical Roman may not have been so well-off after all.

Such anthropometric studies of the ancient world are quite promising, but results to date have been mixed: some see Rome as supporting very high average heights and life expectancy relative to other pre-industrial societies, while others see the results as more mixed, allowing only the conclusion that there was a great deal of variation in the different measures of biological well-being across time, space, and different segments of the population.[29] This is a fairly frustrating situation, as the available evidence really does not permit any strong conclusions one way or the other. I bring up this topic here simply to stress that the issue of biological well-being is of fundamental importance to our understanding of the success of the Roman economy, for surely a major indicator of a well-developed and highly functioning society is the number of people that can be sustained through relatively long and healthy lives. Furthermore, exploring Roman anthropometrics offers a great way to link study of the ancient world with other economic history, as scholars of a variety of historic societies are increasingly searching for this type of evidence. As more work is done to study and quantify the information available for these

27 This study is discussed in Kron 2005a, 75.

28 Pilkington 2013, 33.

29 E.g. Kron 2005; Jongman 2009; Scheidel 2012; Pilkington 2013.

measures, it will be possible to make comparisons between different regions or populations within the Empire, as well as to compare Rome to a growing number of other societies, both ancient and modern. Such comparative studies have the power to reveal novel insights into the way that Rome's inhabitants benefited from the Empire's economic expansion.

In summary, as was the case with GDP-based studies, the existing evidence from the Roman world simply does not support the construction of very precise figures for living standards. This has, again, allowed very polarized views to emerge in the scholarship. This does not mean, however, that we should completely abandon the issue. What we are able to surmise is that, as has been said repeatedly, Rome experienced a significant economic expansion over the course of the early imperial period, which perhaps began at the end of the middle Republic. More to the point, as far as our best evidence shows, there was a large disparity in the distribution of the wealth generated by this growth, with elite Romans being in control both of much of the Empire's productive land as well as a good deal of the financial resources, while wages for unskilled labor seem to have been kept fairly low. This indicates that Rome's wealthiest citizens benefited asymmetrically compared to the lower classes from investments made into production and market activity. This type of economic well-being, then, does not appear to have substantially risen for the majority of the Empire's inhabitants commensurate with the profits captured by the elite population nor with the gains made to overall output.

On the other hand, the ability of some tenant farmers to procure secure rights to their property and to benefit from investments in productivity, the evidence for increased trade and marketization providing more full and diverse consumption habits for all segments of the population, and the development of manufacturing and urban services providing more opportunity for the growing population outside of the agrarian sector all that at least that some of the benefits of Rome's economic expansion were felt by non-elite Romans.[30] Indeed, the simple facts that the Empire could support such a large population over such a wide distance and provide one of the most sophisticated arrays of goods and services known in the pre-industrial world, could establish long-

30 This conclusion actually fits well with Hopkins' 'taxes and trade' model discussed briefly in the Introduction, Hopkins 1980, 2002. It is not my aim here to deal with the Empire-wide patterns of production, consumption, and the flow of goods as Hopkins does, but it is worth noting that there were indeed strong regional patterns to this increasing productivity: rents and taxes paid in the provinces stimulated production while also helped to provide a money-rich market for these goods in Rome and the other major urban centers, as Hopkins pointed out years ago.

lasting stability and security, build communication and information networks, and construct massive infrastructure and architectural achievements all suggest a relatively high standard of living for the majority of those living in the Empire.

How, then, do we reconcile these conflicting patterns? The most promising line is to disentangle the different aspects of well-being to uncover how they moved in opposite directions, leading to the somewhat convoluted picture we have seen here. To this end, I return now to the issue of urban infrastructure and public goods in general, topics I have treated earlier, but which have much to say on the topic of living standards and the distribution of wealth.

4 Sharing the Spoils of Success: Increasing Living Standards with Public Goods

Throughout this work, I have noted the way that growth in marketization and production, in investment, financial mediation, and monetary sophistication not only translated into economic expansion, but also led to urban development, including significant construction and infrastructural projects. In the last chapter I expanded on this, noting the extent to which the state relied on nominally 'private' citizens acting with public interest to furnish most of this urban growth, including the Emperor as the leading patron of the Empire. I have discussed in some detail both the formal as well as the equally-powerful informal (socio-cultural) pressures on Rome's elite citizens to become involved in public life, including engaging in politics as well as providing for the needs of their communities. This included large financial outlays by elite citizens on various sorts of public goods, notably financing much of the urban construction and infrastructural development that occurred throughout the Empire, which I discuss in greater detail above.

One aspect of public goods that I have not treated yet is their impact on the Empire's non-elite inhabitants. Access to a wide variety of public goods and services is an extremely powerful means to enhance well-being and increase living standards across the board, perhaps even the *most* efficient way to spread economic gains to people lower down in the social hierarchy. Additionally, a wide distribution of numerous public goods can act as a counterbalance to disparities in the distribution of other forms of wealth, notably income, access to credit and capital, and landed wealth. These latter forms of wealth are 'private' goods, which can be captured and held exclusively by the powerful elite of any society, while public goods are, by their nature, open and accessible to all segments of the population. There is, in fact, a growing body of sociological and

economic research suggesting that the creation, maintenance, and diffusion of public goods plays a major causal role in economic growth and overall development in all societies, ancient as well as modern.[31]

Public goods are generally regarded by economists to be any good or service that is both non-excludable and non-rivalrous; meaning plainly that no one can be restricted from accessing it, nor does one person's consumption or enjoyment of it diminish the ability of others to use it. Typical examples are the sorts of things I have highlighted in previous chapters as hallmarks of Roman urban space, including roads, irrigation or other water carrying infrastructure, temples and administrative buildings that are open to the public; as well as things like national defense, health care and education (when, of course, it is provided to the public), and access to information (as in proclamations or public notices of policy). Take, for instance, a road: anyone can walk along a public thoroughfare, and the fact that one person does so does not 'use up' the road or in any other way prevent the next person from coming along and walking on it as well. It is, thus, non-excludable and non-rivalrous. Certainly, not all public goods are equally 'public' according to this strict definition, as certainly not all people can access all goods equally even if they are nominally open. A road in New York, for instance, may be a public good, but actually accessing it will be prohibitively expensive for someone living in Los Angeles. Furthermore, things like health care provision or education are certainly excludable, but in certain cases may be relatively public, or perhaps better a *communal good*, if they are open to a large group of people or provided by public means, as with the state-funded universal education systems common in the western world today.

Increasingly, scholars are coming to recognize the importance of public goods not just in terms of urban development or social well-being, but also for bolstering the overall quality of life of a society's inhabitants. This is, in part, one way that economists and scholars of development are seeking to move beyond GDP or income-based measures of prosperity and well-being. For, it has traditionally been assumed that the goods and services that people need for survival and that provide a high quality of life are purchased on the market for money. A person's income, then, coupled with the price levels for these consumables, was thought to determine their standard of living. And to a large extent this is true. What we are now beginning to appreciate, however, is that public goods can provide a significant *supplement* to the goods and services purchased on the market by individuals for their personal, private consumption. Understanding

31 Olson 1965; Levi 1989; Putnam 2000; Bueno de Mesquita and Smith 2003; van Zanden et al. 2014.

the importance of public goods in this way certainly complicates, or rather it nuances, our understanding of figures for per capita income or for the levels of income distribution within a society. If, for example, a person lives in a city with no access to a well, but instead needs to purchase water to keep themselves alive, that expense will eat into their total income. If, on the other hand, potable water is provided by the state at a public well or fountain, that person can get their water without having to spend any of their personal income,[32] meaning it is free to be used to purchase other things. Put simply, an individual's income goes farther the more public goods are available.

It is clear, then, why studying the public goods created in the Roman world is such a critical part of understanding the standard of living of non-elite citizens, as well as in balancing the skewed and problematic narratives that focus only on income, wages, prices, and similar measures of economic well-being. The Roman world was full of all sorts of public goods, as detailed in earlier chapters.[33] These include material benefits such as public roads and communication networks, water carrying systems, and of course the defense and security that came with the state's maintenance of a large armed forces and support for the rule of law. But it also encompassed more ephemeral goods: the temples and shrines that provided for the Empire's ideological well-being; statues, inscriptions, and public spaces; and the large number of monuments, theaters, racetracks, and other buildings that housed various forms of entertainment.

The fairly widespread supply of such public and semi-public (or 'communal') goods throughout the Empire helps to explain the contradictory lines of argument in the scholarship concerning whether or not living standards were rising in the early imperial period. Although wages remained generally low, prices often high (at least relative to wages), and income distributed grossly

32 Apart, of course, from any taxes taken from that income that go towards maintaining the well. Still, taking a small share of each individual's income for a public utility like a well is often more efficient and cost-effective per-person than the costs of creating and distributing that same good through private markets especially when profit-seeking markups are added to the cost.

33 See Chapter 4 in particular. The material evidence for public goods in the western Empire is vast and has been treated in the works of many previous scholars, although very few attempt to collect all of this information into one place, and rarely do scholars even try to synthesize this material in a single analysis as I am trying to do here. Readers interested in exploring the empirical bases of my arguments in this chapter should consult the three recent OXREP volumes mentioned previously A.K. Bowman and A. Wilson (2009, 2011, 2013), which are probably the best resources currently available on the material basis of Rome's economy.

unevenly, the Empire's poorer members nevertheless seem to have benefited from Rome's economic expansion through increased access to public goods—water, communication and information, entertainments, as well as space for all sorts of legal, commercial, and ritual activity. Add to this goods that were not quite public in the strict sense, but nevertheless benefited poorer members of communities. This includes the handouts of cash, food, oil, and other things to local people by wealthy benefactors in cities and towns throughout the Empire, described earlier in this work. All of this spending by the Emperor and Rome's other elites were the other part of the 'grand bargain' mentioned in Chapter 4, where the Empire's wealthiest citizens sought to justify and secure their positions through these acts of public benefaction. It also fits into the overall prosocial culture that helped to support and maintain this bargain for centuries.

The Roman Empire, in fact, stands out from other pre-industrial states in its public goods provision. It has been argued, for instance, that early imperial China was roughly on par with the Roman Empire in extent, population, and overall level of economic output.[34] China was, however, much less developed in terms of market activity and monetization and was less urbanized than Rome, which translated into fewer public goods accessible to its inhabitants.[35] There is also evidence that this general pattern continued into the Medieval period, with urbanization remaining low in China and public goods provision being much more localized and small scale than in western Europe, which inherited a tradition of elite benefaction and civic engagement from the Roman Empire, translated of course by early Christian doctrine.[36] Still, it is clear that the development of feudal systems of exploitation along with diminished urbanization and trade networks lowered the provision of certain types of public goods in Europe during the high Middle Ages, particularly public buildings and infrastructure.[37] This serves to further underscore how precocious Rome was during the high imperial period in terms of public goods provision.

It must be stressed that I am not trying to paint too rosy a picture of life for Rome's poor, nor even am I arguing that there was a something like a large 'middle class' who captured much of the economic rewards from this imperial expansion, as some scholars have asserted in recent years.[38] Again, the available evidence supports the interpretation that income was distributed

34 Scheidel 2009c, 2015b.
35 Sadao 1986; Lewis 2007, 2015; Zhao 2015.
36 Greif and Tabellini 2010.
37 McCormick 2001.
38 Erdkamp 2015a; Kehoe 2015.

very unevenly within the Empire, with the wealthy elite capturing most of the economic rewards while the majority of the population toiled for relatively low wages or on small plots of land, even if overall the per capita income was high by pre-industrial standards or if some tenant farmers were able to profit from economic developments. It is clear that most Romans were poor and that poor Romans had very low incomes, on par with other pre-industrial societies where most people lived not much above subsistence.[39] It is also worth pointing out that Rome's public goods did not cover every aspect of well-being that people in the modern world expect. There was no publically-funded, universal education system, for instance, nor public health care, two of the principal components of human capital and high living standards in contemporary society. Rome did feature a prominent education system from Republican times, but of course this was not a 'public good': Roman education generally consisted of tutors procured for individuals at personal expense. In fact, Rome's education system was heavily geared towards providing children of wealthy elite citizens with the skills in political, legal, and philosophical theory and rhetoric necessary to maintain their elevated status in later life.[40] Roman education, then, far from helping to balance sharp income disparities by providing skills and training to non-elites, just reinforced the division between the rich and the poor and served mainly to perpetuate social hierarchies. This too is an underexploited aspect of wealth distribution that is not often considered in studies of Roman living standards.

The other factor mitigating the impact of public goods on the overall well-being and quality of life of non-elite Romans was the great geographic variation in their provision. The free distribution of grain for Romans living in the city of Rome is the clearest example of this, for clearly this 'grain dole' contributed significantly to the overall standard of living and effective income, but only for those living in and around the city. This geographic variation extended to other public goods as well. Mainly, this is linked with the different rates of urbanization across the Roman Mediterranean. I treated this in previous chapters, so will not dwell on the matter much here. Let it suffice to remark that urban development was uneven in the different provinces, with Italy, the African provinces (particularly Proconsularis), and southern Spain, as well as the eastern Mediterranean, featuring more numerous, larger urban spaces, based in large part on their longer history of urban life compared to other parts of

39 Allen 2009; Scheidel 2010.

40 Cribiore 2001; Connolly 2007, 2011; Horster 2011.

the Empire, in particular northwestern Europe.[41] Indeed, the most urbanized regions were also the most economically productive ones, and this is no coincidence. I discussed previously how urban growth tracks very tightly with economic activity generally, including market development, financial mediation, and productivity increases. Economic and urban development were certainly mutually supporting dynamics in the Roman world. More importantly for the purposes of this discussion, the majority of the public goods that were available in the Empire were located in urban environments as well. This is natural, as many of these goods were urban in nature, such as the religious and political infrastructure that were necessary features of Roman cities. Furthermore, it is always more efficient to provide goods to large, centralized agglomerations of people than to sparsely populated rural environments. Goods like drinkable water, roads, and public spaces for commercial, legal, informational, or entertainment activity thus only really make sense in densely inhabited urban areas. In this way, we see a third line to the mutually reinforcing dynamic between urban development, economic expansion, and increased living standards through access to public goods: all three tended to coalesce in the same areas, each supporting the others.

What this also meant, of course, is that there would have been significant disparities in living standards due to this geographic variation in urban development and, subsequently, public goods provision. This is on top of the fairly high degree of inequality in income disparity in terms of social hierarchy; rich Romans were very well off all over the Empire and poor Romans struggled, but this disparity was alleviated to some degree by the availability of public goods for those non-elite peoples living in the more urbanized parts of the Empire. We must add to this as well the aspect of *time*. As we saw in earlier chapters, economic and urban development in these different parts of the Empire began in the mid-late Republican period, then really took off during the first two centuries CE. The importance of this dynamic for understanding living standards cannot be overstated. What it means is that, while elite incomes were growing both in absolute terms as well as relative to the rest of the population during the early imperial period, part of this wealth was being 'redistributed' to the non-elite population through the increasing quantity and availability of public goods, especially in these urban centers. It also means, however, that the areas where economic activity and urban development were greatest would have featured, somewhat paradoxically, both the highest disparities in income between rich and poor but also some of the highest non-elite living standards.

41 Edmondson 2006; A. Wilson 2011.

The above discussion adds some much needed clarity to current debates about economic growth and living standards in the Roman Empire. Although the picture that emerges is one of variation and differentiation, it is important to tease apart the different facets that go into well-being and quality of life in order to gain a more comprehensive view of the issue. What I offer here is an overview of the various elements involved, in particular economic development, income distribution, and access to essential goods and services, as well as some of the key geographic differences and temporal dynamics involved in these processes. What is needed to continue to refine our picture of Roman living standards are further efforts at quantification, measuring not only income, wages, and prices for different people and goods, but also quantifying as far as possible the amount and impact of the public goods created in the Empire. This will allow us to trace more clearly the way that living standards rose or fell in different regions at different times, as well as relate Roman evidence to other pre-industrial Empires. Studying Roman living standards in this way, thus, has the potential to contribute significantly to current debates about the root causes of economic development and quality of life increases in both historical and contemporary societies, perhaps the central issue in economics and development studies.

5 Collective Action and Prosociality in the Creation of Public Goods

The final aspect of public goods that needs to be highlighted is the amount of cooperation and coordination that they require. In fact, this is a central concern of the political and social theory that deals with the economic impact of public goods. It is generally recognized that public goods involve a great deal of collective action. Since these goods are, by definition, non-excludable and non-rivalrous, it is typically impossible for individuals to benefit financially from them.[42] The difference between a public road and a toll road, for instance, is that toll roads garner an income by adding an element of excludability through the tolls placed at entry points, which makes the road a non-public good. Without this excludability, it is impossible to prevent people from using the good or service without paying for it (namely, free-riding). Public goods benefit large groups of people rather indiscriminately and cannot be easily translated into profit-generating schemes, thus they require some other motivation beyond personal financial return. This is where the theory of collective action comes

42 Olson 1965; Levi 1989; Ostrom 1990; Turchin 2003; Blanton and Fargher 2008; Turchin 2015.

in, for it is only in societies that can cooperate enough to expend the necessary time, energy, and money that these public goods can be constructed and maintained.

This is not to suggest that public goods only appear in utopian, fully egalitarian societies. Far from it; they often originate from the interests and decisions of the rulers and social elite, as we see clearly in the Roman case. But cooperation in this sense—or better, prosociality—essentially describes the ability of a society to maintain the *status quo*. It means that most people will accept that rulers and elite will accumulate most of the political power, social status, and wealth, but that the rest of the population will be protected from predation and dislocation, and be provided with enough goods and services to maintain their livelihoods. It involves also the sort of social capital discussed in great detail in earlier chapters, as rulers and other elites can garner this capital through actions that benefit the wider public, cashing it in for their trust, cooperation, and compliance. The alternative is a more starkly hierarchical and exploitive society, where rulers maintain their positions and their extraction of free-floating resources through violence and intimidation, which generally produces very unstable and deeply unequal states.[43] Anthropologists Richar Blanton and Lane Fargher sum this up neatly in their theory of collection action as a crucial causal factor in early state formation, noting that "[i]n the more collective states, reciprocity between rulers and taxpayers is hypothesized to develop in which the state provides public goods and services (or collective goods and services) in exchange for taxpayer compliance."[44] Collective action is seen in the creation of public goods through the willingness of the majority of the population to pay the taxes that get used for the benefit of wider society: to construct roads, aqueducts, and other public goods by submitting labor to the state or to other landowners and elite benefactors as *corvée* workers on public works projects. It is also seen in a general acceptance that certain groups in the society will gather a considerable amount of wealth.

I discuss this type of prosociality and its relation to both social capital and public goods construction in some detail in previous chapters when treating elite benefaction. It is important to bring it up again here because it is fundamental to the quality of life enjoyed by different segments of the Roman population. As certain parts of the Empire experienced significant economic development, coupled with growing urbanism as well as a widening gap between

43 Bueno de Mesquita and Smith 2003 offer a compelling theory to explain the circumstances that promote rulers to offer public rather than private goods and the broader effects such his decisions have. See also Levi 1989 for the seminal account of the predatory ruler.

44 Blanton and Fargher 2008, 133.

rich and poor, the social and cultural norms that had evolved over the course of Rome's imperiogenesis influenced the actions of rulers and other wealthy citizens, prompting the state to uphold their end in this collectivity and compelling elites to look after members of their local communities through benefaction and the creation of various sorts of public goods. These actions, then, allowed many poor Romans to have reasonably high standards of living in spite of the gross disparities in wealth, bolstering the collective action and cohesion within the Empire that allowed Rome to maintain peace and stability, to pursue its political aims without much internal turmoil, and to prosper economically for centuries. This prosociality and all of the benefits that it carried did not last forever, however. In the next chapter, I offer a brief survey of the tumultuous period in the late third century when many of the Empire's social, economic, and political systems began to break down. I highlight there how these changes affected the economic activities that I have discussed throughout this work, which allowed Rome to flourish in the early imperial period.

CHAPTER 6

From Prosociality to Civil Strife: Conflict, Stagnation, and Growing Regional Divides in the Third Century CE

This sixth and final chapter is meant to serve as something of a coda for the entire project. In the Introduction, I discuss the importance of testing alternative explanations directly against each other in order to properly address 'big' historical questions like the factors underlying Rome's economic development. The previous chapters explored the ways that Rome's economy expanded during the early years of the Empire, especially in terms of the growth of markets, cities, and the monetary economy. A key theme running throughout the book is the involvement of Rome's political, social, and economic elite; the wealthy group of Senators and other political elite (*equites*), landowners, and businessmen who were able to get very rich through the support of Rome's institutional structure. The flip-side to this picture, which I stress time and again, is that certain prosocial cultural norms also led these elite to act in many ways that were more broadly beneficial, both in terms of supporting economic development and of translating some of this newly created wealth into various forms of support for local communities. The question is: can the importance of these features be further tested with the available evidence? The answer, I believe, is yes. The way to do this is to extend our time-series past the typical bounds of the 'High Empire'.

The idea is fairly simple: if the factors discussed in earlier chapters did indeed play major causal roles in the economic expansion of the first two and a half centuries CE, then the same features should change during—or right before—periods of economic decline and regression. This is an important step in counterbalancing the somewhat positivist picture that can result from looking only at the period of expansion. This is also something that, unfortunately, has not been embraced by most of the scholars who work on Rome's economic history, for typically their investigations begin and end in the period of Rome's florescence.[1] It is too easy to be misled by specious correlations when looking at just one type of evidence, in this case one particular, constrained time

1 An interesting recent exception is Erdkamp 2015b, who does explore what happened both during Rome's economic ascent as well as its declines in the third century and Late Antiquity.

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period. Almost any feature that existed during this time can be pulled out of the evidence and given a causal role. Certainly, this applies to the arguments put forward in this work so far. What is needed now is *variation*. Only by extending the period under study into the mid third century is it possible to test whether these putative causes can explain moments of both advance and decline. It is also worth noting here that an important next step beyond this is to increase this variation even further through the incorporation of other societies into a broader comparative study; comparative work is crucial for distinguishing general causal forces from factors that apply only to particular historical circumstances.[2] Such work is beyond the scope of this book, but hopefully the ideas and evidence put forward here can spawn the inclusion of Roman material into wider, cross-disciplinary studies of economic history.

What I can do here is explore how Rome's institutions, market and monetary integration, along with social and political norms changed during the latter half of the third century CE. The period from the end of the Severan dynasty in 235 CE until Aurelian's reign in the 270s is a notorious period for historians of Rome, and a still poorly understood one. It was one of Rome's most tumultuous times, when the Empire experienced nearly constant warfare against both internal and external threats, devastating plagues, a long series of claimants to the imperial throne, as well as many instances of political, military, and economic dislocations. Because it is such a difficult and confusing period, it is often the subject of its own specialized study, sometimes identified as the opening *salvo* in Rome's long march to Late Antiquity, sometimes treated as a unique blip in imperial stability. In either case, the result is that few studies really combine the events of this period with those of earlier times, except occasionally to note how exceptional they were. This is a shame, for it overlooks the long, slow, dynamic processes that led to the turmoil in the first place. It is also makes it difficult to see exactly what happened from one period to the other. I therefore discuss here two of the more salient events of the period—the usurpation of the throne by Maximinus Thrax in 235 CE after the murder of Severus Alexander, and the 'year of the six Emperors' that resulted from the chaos; and the breakaway Gallic empire ruled by a former Roman military general in the 260s. These two events allow me to highlight how the various factors identified as significant to Rome's economic performance were operating, how they had changed during the second century, and whether these changes can explain the turmoil and overall economic decline of the period.

2 Hoyer and Manning (forthcoming).

1 An Overview of the 'Crises' of the Third Century

First, it is useful to give a very brief overview of the pertinent events that occurred in the western Empire from the 230s to the 270s CE. Severus Alexander, the last of the Severan rulers, was assassinated in 235 CE. This marks the beginning of this period of turmoil. For a few years after Severus Alexander's death, a military commander of fairly humble birth, Maximinus Thrax, held the throne in Rome. Maximinus was the first of the so-called *Soldatenkaisers*;[3] popular and successful Roman military leaders who aspired to rule the Roman world and who used their control of groups of soldiers to claim, often only briefly, the ultimate power in Rome. Being from a non-Senatorial, provincial lineage, Maximinus was disliked by the political elite in Rome. In 238 CE, some of the leading Roman citizens living in the province of Africa Proconsularis murdered the province's procurator, then roused an elderly senator and former governor named Gordian out of retirement on his estate in modern Tunisia, convincing him to revolt against Maximinus and to take the throne in Rome. The senators in Rome also declared Gordian emperor, hailing him as defender of the Empire against the illegitimate usurper Maximinus. Before he could take up power, however, the leader of the only legionary force in Africa (the *legio III Augusta*) decided to support Maximinus and lead his troops into Carthage to stop Gordian from embarking towards Rome. In the skirmish, Gordian's son was killed along with other supporters, leading Gordian to commit suicide. To replace Gordian, the Senate declared the aristocratic Pupienus and Balbinus co-emperors along with Gordian's grandson, thirteen-year-old Gordian III, as their junior colleague. Maximinus then invaded Italy, but was murdered by his own troops during an unsuccessful siege. Shortly thereafter, Pupienus and Balbinus were also murdered by their own troops, leaving the young Gordian III as sole emperor, the sixth person hailed emperor in the year 238 CE. Such turmoil continued for the next two decades, with nearly constant turnover of the Emperor as new ambitious leaders, mostly military generals, kept springing up to try their hand at rule.

The next significant and damaging episode of this period began in 258 CE in Roman Germany. At this time, a man named Marcus Postumus was governor of the province of Lower Germany. Leading a legion and serving under the

3 These are the 'barracks' or 'soldier' Emperors: short lived rulers during the mid-third century who mainly came from relatively low-ranking military positions to claim the Emperorship. Not all Emperors during this period, though, fit this description and the term used here is meant simply to denote the chaotic period in which numerous claimants to ultimate power came forward backed by factions of the Roman military.

emperor Valerian's son Gallienus, Postumus participated in the defeat of an invading Germanic tribe. Postumus was very generous rewarding his soldiers with booty after the victory, but Postumus' superior commander, a certain Praetorian Prefect named Silvanus, took much of this booty away for unknown reasons. Postumus' troops were angered by this and staged a revolted. They soon captured Rome's military base in Cologne, killed Silvanus, and hailed Postumus as not only their military leader but as the new Emperor.[4] Postumus quickly consolidated his power, taking control of all the armies in Gaul and Germany and, by 261 CE, extended his authority into parts of Spain and Britain. The area under his rule came to be termed the Gallic Empire (*Imperium Galliarum*). In order to secure his independent rule over this territory, Postumus was forced to repel a major attack led by Gallienus, the 'legitimate', central Roman emperor, in an attempt to reclaim the Gallic territory for Rome in 265 CE.

In 268, Postumus was, like so many leaders at this time, eventually murdered by his own troops in a revolt. In the chaos, the then central Roman emperor, Claudius II Gothicus, was able to wrest Postumus' Spanish holdings away from the Gallic Empire. Claudius, however, was unable to capitalize on his victory or on Gaul's internal turmoil at the time. The Gallic Empire existed in effect as an independent entity until the defeat of Tetricus I and II, the last of the Gallic emperors, by Aurelian in 274 CE. Interestingly, a very similar splintering of Roman authority was occurring at the same time in the East, as the Palmyrene Kingdom was being consolidated as an independent territory under a powerful local leader and high-ranking Roman official named Odeanthus. During the 260s CE, then, the Roman world was "fractured into three parts", with the core of the Empire barely holding together under the 'legitimate' Emperor at Rome, the Gallic Emperor in northwestern Europe and Spain, and the Palmyrene Kingdom in the Near East.[5] It was only during Aurelian's aggressive campaigns aimed precisely at reunification of Rome's lost authority that some semblance of normalcy returned to the Empire. The well-known reforms of Aurelian's successor, Diocletian, then, helped to solidify this restored cohesion for some time thereafter.

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4 The most comprehensive account of this period remains Drinkwater 1987. For useful, more recent summaries of the events, see Potter 2004; Luther 2008. I wrote on this topic in an earlier article, offering a more detailed view of the differences between the African provinces and the Gallic Empire in terms of military, economic, political, and ideological processes Hoyer (forthcoming).

5 This is how Potter 2004, 263 describes the Roman world at this time, with the Palmyrene Kingdom in Egypt and the Near East having a similar rupturing effect on the Roman Empire as the Gallic Empire.

2 What Really Happened after 235 CE?

The notion that the third century CE was a time of crisis, when the stability and prosperity of the High Roman Empire were suddenly undermined by barbarian invasions, disease, civil warfare, and financial ruin, has long featured prominently in analyses of the later Roman Empire.[6] This crisis has often been seen as an all-encompassing decline in Roman civilization which began at the end of the Severan dynasty in 235 CE and which ultimately led, with perhaps a brief recovery in the early fourth century after Diocletian's reforms, to the collapse of the Roman state and the onset of the Medieval period.[7] In more recent years, however, the idea that there was a crisis at all has been questioned. Some scholars have gone so far as to suggest that crisis is an inadequate description of this period, preferring terms like transformation and change.[8] Others argue that there was no single, Empire-wide crisis, rather a series of isolated and regionally specific problems, such as disease in the Eastern Mediterranean and military threats along the northern frontiers, while other areas actually experienced a period of prosperity.[9]

Although there is still no consensus on how to describe the period, it is undeniable that in at least some parts of the Roman world, certain fundamental changes occurred. Yet while many of the troubles were felt Empire-wide, particularly in terms of increased military activity and political disorder, the fragmentation of many aspects of Roman imperial rule that this period witnessed must also be explored with an eye towards regional differences. Specifically, an overview of the western Empire during the later third century reveals fairly clearly that certain areas were hit considerably harder by the crises—particularly in northwestern Europe in Germany, Belgium, and eastern France as well as Britain—than others, notably North Africa, Spain and, to some extent, Italy. These regional differences are actually quite beneficial for this discussion—they add further variation that helps clarify the role of the various factors in the different regions' stability and economic productivity.

A major part of the story is surely the lingering effects of the Antonine Plague. This issue has been treated in great detail by scholars of the Roman

6 A useful and recent survey of this notion in modern scholarship is provided by Liebeschuetz 2007.

7 The tradition begins really with Gibbon, but other scholars have followed suit as well, notably MacMullen 1976; Alföldy 1989.

8 E.g. Potter 2004, 263–298.

9 Witschel 1999; Le Glay 2005.

Empire, who disagree on the precise nature and impact of the plague.[10] The Plague was most likely some type of smallpox, although this is not entirely clear. The disease—or perhaps better series of related outbreaks—seems by all accounts to have originated in the Near East, spreading largely through the ranks of soldiers on campaign against the Parthian Persian Empire in the 160s CE. Several flare-ups of disease followed, affecting largely Egypt and the Germanic provinces, the latter owing likely to the high concentration and movement of soldiers there (more on this below). Again, it is not entirely clear how much of the Empire's troubles in the third century can be traced directly back to the Plague. Scholarship is increasingly erring on the side of caution, asserting that there were significant demographic contractions, especially in the populous and economically productive province of Egypt, and these contractions had effects on the economic activity of the region. This is especially true regarding wages and the value of land, for as the population decreased labor availability shrank, leading to higher wages per unit of labor and lower demand for land, which lowered in price. It is nevertheless becoming clear that, at most, the effects of the Plague had largely indirect consequences on other areas of Roman life and really are best understood as one in a long string of interacting and overlapping factors of the Rome's third century troubles.

One such indirect effect stands out as particularly pertinent here. As the effects of plague spread throughout northern Europe, many of the 'barbarian' peoples living in central Europe were caught up in the turmoil. Whether due to their own demographic crises, or merely sensing a moment of weakness on the fringes of Roman rule (likely a combination of the two), waves of Germanic and Sarmatic tribes came rushing West, confronting Roman troops in the Rhine and Danube regions. Again, it is critical to note the regional differences here, as both the demographic and military troubles associated with these periodic disease outbreaks and the repeated confrontations with tribal groups were problems not faced to any great extent by Romans in in the southern and western Mediterranean.

Indeed, the regional military differences stand out as particularly glaring during this time. As far as the western Empire is concerned, the vast majority of Rome's legionary forces were stationed in the northwest, along the Germanic frontier as well as in Britain. This part of the Empire had seen a steady influx of soldiers since in the Marcomannic Wars under Marcus Aurelius in the 160s CE; precisely the time of the first major outbreak of the plague, underscoring

10 Scheidel 2002, Bagnall 2002, Greenberg 2003, and Bruun 2007 offer useful, though differing, recent accounts of the plague's impact.

the overlapping impact of warfare, interaction of peoples, and the spread of disease. This stands in stark contrast to the rest of the western Empire, particularly Africa. The African provinces were relatively under-militarized throughout the imperial period, hosting only one legionary force for the entire region. The chief military duty of this legion seems to have been protecting and enforcing the borders of Roman control from the threat of invasion by largely nomadic Numidian tribes to the South. Even in the late second and throughout the third centuries, however, as the Danubian frontier as well as the border between Rome and Persia in Mesopotamia in the eastern half of the Empire saw prolonged periods of hostility and the concomitant influx of military power, Africa remained relatively peaceful.

The importance of this for understanding the third century is in highlighting the deep roots of the problems. It was not that the Antonine Plague or even fighting against Germanic tribes *caused* all of the period's turmoil; rather, outbreaks of devastating disease and increased military activity in certain areas during the latter half of the second century were each separate waves that came crashing against the institutional, economic, and socio-political fabric that had evolved over the course of the imperial period and before. In some areas, these waves kept coming, eventually breaking through with some rather profound effects, while other regions managed to keep the levies intact, so to speak. The decline of Roman stability and ultimately her power was likewise a long process that evolved over several decades through the interaction of multiple forces. As Peter Turchin put it in his survey of the general causes of imperial growth and decline throughout history, it was after the Severan Dynasty came to an abrupt end that "[t]he imperiopathosis of the Roman nation went into its acute phase, and sometime during [the next 50 years] the patient died."[11]

3 Money, Investment, and Markets

The latter half of the third century CE was characterized by continual fighting both civil and foreign, disease, and political chaos. This turmoil was attended also by some severe social and economic changes. Whether these changes were merely the result of the military and political upheaval of the time, the underlying cause of the chaos, or if all of the problems exhibited a reinforcing dynamic is a difficult question to answer, but one I will return to at the end of this chapter. First, let us look at some of the key changes to the monetary

11 Turchin 2006, 303.

and market economy that occurred in this tumultuous period. Then I will turn my attention towards some of the material evidence for productivity and the exchange of goods, tying the developments to the factors that led to Rome's early imperial economic expansion discussed in the earlier chapters. With all of this, though, it is necessary to distinguish northern Europe from the southern and western Mediterranean regions.

Earlier in this work, I describe in some detail the significance of Roman customs towards benefaction and how the Empire's elite, prominent citizens spending part of their wealth on charitable foundations and a variety of public goods had knock-on effects for the development of markets and monetization. These effects, though, were not uniform across the Empire, but existed in the areas of the greatest concentration of not only extremely wealthy and politically active citizens, but also of urban centers, where most of this activity was centered. In terms of the western Empire, this meant that North Africa, particularly the province of Africa Proconsularis (around modern Tunisia), as well as Italy and parts of Spain and Southern France saw the most dramatic efflorescence of economic productivity, market activity, and expansion of urban infrastructure. This is not to say that Rome's holdings in northern and eastern France, Belgium, Germany, and Britain were completely isolated from these developments, but it is important to note that the seeds of a North-South regional divide were planted already at the onset of the western Empire's early imperial development.

I mentioned before too that the evidence for this sort of elite activity falls off the cliff by the mid-third century CE, a coincidence (or, more properly, correlation between factors) that lends a great deal of support to the notion that such activity is at least tied to the overall social and economic health of the Empire, if not a key part of the causal chain. It is interesting to note that this sort of material reappears in the fourth century in Africa and Italy, indicating a fairly speedy recovery, at least relative to northern Europe. What seems to have happened is that the increased military activity that began to occur along the Germanic frontier in the later second century CE, coupled with the effects of the Antonine Plague and subsequent outbreaks, disrupted the peace and stability on which the regional economy relied. As soldiers flooded into the area, the 'normal' workings of the market economy were disrupted by the needs and demands of the troops and the increased role of the state in the area requisitioning and purchasing goods to supplying their soldiers. Trade and exchange seems to have been hampered as well by the continual threat of warfare. Already under-urbanized compared to other areas of the Empire, wealthy Romans in the region retreated from the normal actions and behaviors of Rome's socio-political elite, leaving a gap in the supply of money and invest-

ment that, as has been shown throughout this work, served as the backbone of Rome's imperial economy. The culture in northern Europe was changing from this prolonged period of unrest and with it the region's economic fabric was beginning to unravel. Eventually, this led to a complete fissure from the Empire with the breakaway 'Gallic Empire' of Marcus Postumus. As far as our evidence indicates, the provinces in the southern Europe and North Africa were insulated from most of these ills, at least during the second century, which seems to explain their comparatively light difficulties during the mid-third century.

But let's look at this a bit further. Exploring Roman coinage in-depth offers one of the best windows into the changes that these different regions were undergoing during the period. I described in Chapter 3 Rome's trimetalic monetary system, composed of very high value gold *aurei* (minted in relatively small numbers), silver *denarii*, which formed the backbone of the monetary economy, and several types of lower-value bronze coins, including *sestertii*, the main unit of account for monetary transactions. As with so many aspects of imperial life, this system was disrupted in the third century. In 215 CE, the Severan Emperor Caracalla introduced a highly overvalued billon[12] coin, the *antoninianus*, as a cost-saving effort for the Roman treasury. Billon is essentially a base-metal coin, in this case a bronze alloy, with a small amount of precious metal mixed in, here silver. Various techniques can be employed to bring the precious metal to the surface, making the coin appear more valuable than it is.[13] The idea of billon, then, is to make a coin that appears to be, and so is used by consumers as, a precious metal coin, but its base-metal core makes it much less expensive to produce.

As we have seen, the early third century was a time when Rome's many troubles were on the rise. In addition to the problems noted at the beginning of this chapter, there was also a problem with the supply of precious metal, as many of Rome's main sources of silver had begun to dry up in the late second century.[14] The billon *antoninianus* was mainly a bronze coin, made from the much cheaper and more abundant metals needed to produce bronze, containing only small amounts of silver. Moreover, *antoniniani* were tariffed at twice the value of the pure-silver *denarius* that had been the backbone of the Roman currency system since the reforms of Augustus, yet they contained

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12 Billon refers to a coin made prominently with bronze, but plated with silver. For more on this important monetary development, see especially Lo Cascio 1984; Hollard 1996; Carrié 2007.

13 Butcher and Ponting 2014 offers the best account of Roman minting of silver.

14 Keay 1998; Domergue 1990.

only one and a half times the silver as old *denarii*, and this figure dropped continually over the course of the third century. *Antoniniani*, therefore, allowed the state to increase the amount of money in circulation while conserving precious silver reserves as much as possible. It amounts to one of the ancient world's most dramatic attempts at introducing a truly fiduciary coinage, closer to the type of money we are familiar with today where the material of the monetary article—be it coin, paper note, or digital account—has almost no intrinsic value of its own. The value comes in only in the 'faith' (the fiduciary component) that it can be exchanged for goods and services. The *antoniniani* was surely not as fiduciary as modern paper money, but its arbitrary tariffing as having a value of 2 *denarii* when this was not supported by its metal content (intrinsic value) was without question a step in that direction.

This experiment in fiduciarity, however, was a failed one. The minting of *antoniniani* was abandoned shortly after they were introduced, as they were largely rejected by coin users for being too overvalued. In the 230s, however, the same pressures that led Caracalla to introduce the billon coinage were further exacerbated by continually dwindling silver supplies as well as by persistent military conflicts in the North and in the East. Moreover, the beginning of the *Soldatenkaiser* period in which military leaders were constantly competing with each other for power by bestowing financial benefits on their supporters, mainly the troops under their command, likewise put pressure on already taxed monetary resources. The *antoninianus* was, therefore, reintroduced and, until Aurelian's currency reforms in the mid-270s, *antoniniani* were produced in very large numbers with ever decreasing amounts of silver.[15] It is quite important in this regard that Postumus, as independent 'Emperor', issued a vast number of coins during his reign, almost all of them these billon *antoniniani*. These coins looked just like 'normal' Roman coins, featuring similar iconography and inspirational inscriptions about the power and fecundity of the Empire, only it was the Gallic, not the Roman Empire and it was Postumus himself with the normal title of a Roman Emperor (*Imperator Caesar*) and as the 'Wealthy Emperor' (*Uberitas Aug*(*ustus*)).

Postumus issued so many coins primarily to pay the troops upon whom he relied heavily as his basis of power and authority.[16] Indeed, one of the major advantages Postumus held in the territory of the *Imperium Galliarum* was his control of the imperial mints at Cologne and at Trier. This allowed him to produce the large quantity of coinage he needed to continually furnish

15 Hollard 1995; Estiot 1996.

16 Hollard 1996; Harl 1996; Estiot 1996.

his supporters with largess, which was essential in keeping his Empire intact. In the south, by contrast, although *antoniniani* circulated in large numbers, there was not the same separation between areas. Nearly all of the coins in this period outside of northern Europe continued to be minted at the official mint in Rome, as had been the case throughout the imperial period. In North Africa, for instance, there had been no local minting of coinage since the production of some bronze coins under emperor Tiberius in the mid first century CE.

The reasons for the introduction of the overvalued *antoninianus* under Caracalla were not only the dwindling supply of silver, but was also the increasing costs to the Roman state in this period, particularly in the form of payment and largess distributed to soldiers. As the late Antonine period saw a steady increase in military activity, particularly in northern Europe as well as along the eastern frontiers, the cost of supporting an elevated military presence in these areas grew as well. For this increased activity led to an increase both in the number of soldiers supported by Rome, but also spurred both Septimius Severus and Caracalla to raise military pay and to bestow great financial benefits in order to recruit and retain loyal soldiers.[17] The link between this military activity and the *antoninianus* is supported by the evidence from the coins themselves: the vast majority of *antoniniani* produced in the mid-third century that survive today were found in Gaul, Germany, and Britain, which includes coins minted before the creation of the Gallic Empire as well as, of course, the many *antoniniani* minted by Postumus himself. Similarly, not only are *antoniniani* finds relatively scarce in the rest of the western Empire overall, but these coins do not begin showing up until later, generally the 250s CE.

What is particularly interesting about this experiment in fiduciarity is that the creation of a billon currency was not the first manipulation of the currency the Roman state undertook in an attempt to combat these problems. Even before 215 CE when the *antoninianus* was first minted, the two principal denominations circulating within the Empire, the silver *denarius* and the bronze *sestertius*, underwent a series of debasements.[18] The impact of these debasements, however, was unevenly felt. Notably, *sestertii* minted at Rome and

17 Septimius Severus famously courted military supporters by raising pay for legionary soldiers from the 300 *denarii*/year it had been under the Antonines to 400 *denarii*/year. Caracalla raised it a further 200 *denarii*/year. On this, see particularly Harl 1996, 216. For the effect of Severan military policy specifically on coinage, see Depeyrot 1988; Abdy 2012. On the largess distributed to loyal troops by third century emperors, see Carrié 1994, 193–194; de Blois 2007, 498–502.

18 Caley 1964; Callu 1969; Howgego 1996; A. Johnston 2007.

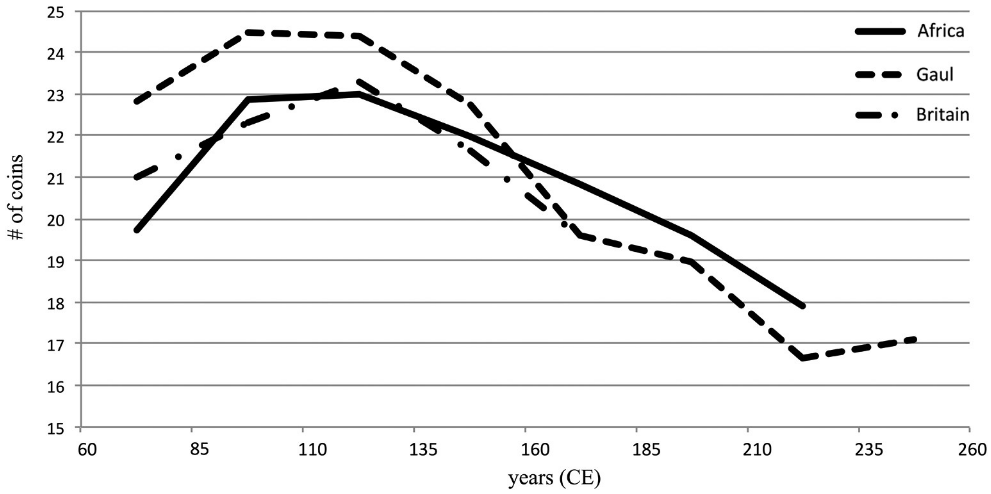

FIGURE 8 *Median weight of* sestertii *minted at Rome over time by region where the coin was found* (*n* = *7,668*)

found in Gaul and in Britain were being minted at increasingly lower weights beginning already in 161 CE.[19] Conversely, the same type of coins which ended up in Africa and Spain did not begin losing weight until later, and even then the debasement of coins found in these regions occurred at a much lower rate than those from the northern provinces. Thus, *antoninianus* was itself only an extreme form of the currency manipulation that had been ongoing for decades. Its different regional impact, moreover, was likewise the continuation of an existing regional split in the monetary system.

This all caused what can only be described as a fracturing of the western Empire into distinct monetary zones: the relatively early and severe debasement of the traditional denominations along with the early introduction of the *antoninianus* in northwestern Europe; and the continued use of the traditional denominations at relatively stable weights and values in southern Europe and Africa. Note again how this split follows precisely the same regional divide as the heightened military activity, the effects of disease outbreaks, as well as the overall scale of economic development, market activity, and urban expansion noted throughout this work. This is no coincidence, but all of these factors are leading in the same direction, interacting over time with the result being what we now know as the 'crises of the third century.'

19 This is illustrated in Figure 8.

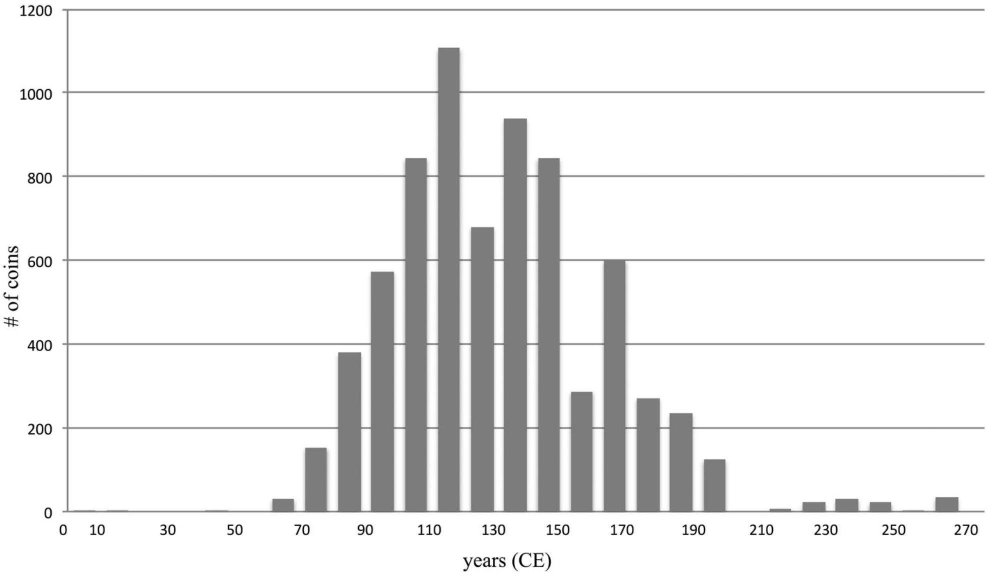

FIGURE 9 *Number of coins found in the Gallic region by decade minted,* antoniniani *not included* (*n = 7,204*)

The 'solutions' attempted by the Roman state to solve the issues facing them in northern Europe, moreover, only exacerbated the problems. Debasement and the introduction of the overvalued billon *antoninianus* were intended to allow the state to expand the number of coins in circulation drastically without a similarly sharp rise in the amount of precious metal being used. This increase in coinage, which, again, was aimed primarily at the regions with the largest concentrations of soldiers in northern Europe and in the East, led also to an inflationary period in these same areas, certainly monetary inflation if not also price inflation. It has been noted too that Gaul saw a vast increase in imitation of both *antoniniani* and *sestertii* during this period, particularly under the Gallic emperors, another sign that the currency manipulations of the time were not able to adequately supply people's requirements for usable, good quality coins, leading to serious and widespread tensions in the financial system of northern Europe generally.[20] Figure 9 shows that the number of non-*antoniniani* coins that were found in the various Gallic provinces drops off already from the mid-second century CE, being replaced by massive numbers of the overvalued billon currency. Figure 10 shows that the same process occurred in in North Africa, though really only in the mid third century, before

20 Crawford 1975; Estiot 1996; Hollard 1996.

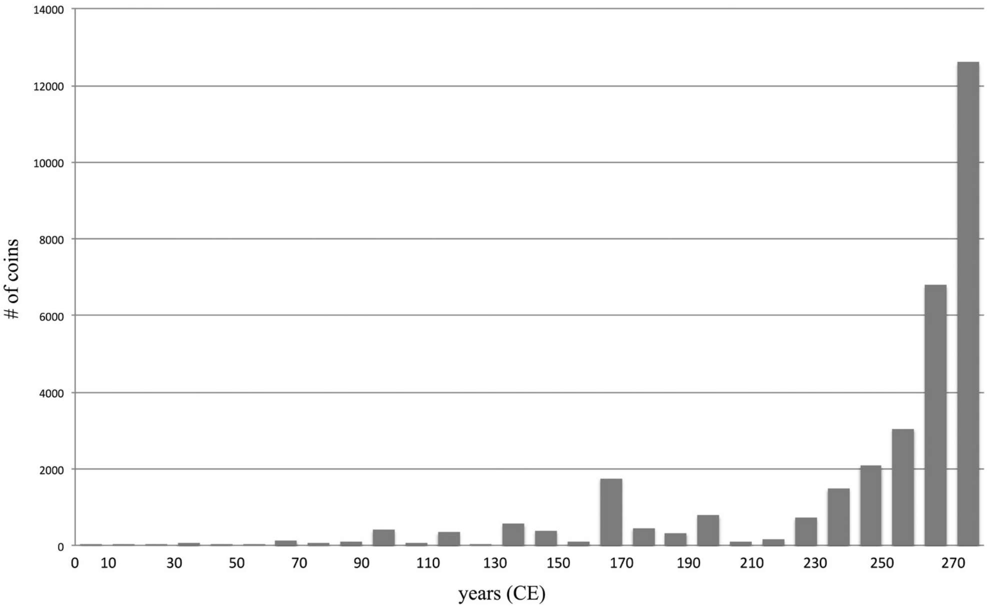

FIGURE 10 *Total number of coins found in Roman Africa by decade minted, with* antoniniani (*n* = 32,920)

which *sestertii* were still found in relatively large numbers (see Chapter 3, Figure 5). This all suggests again that Africa was able to stave off the dislocation of the traditional monetary system until much later compared to northern Europe.

Such an inflationary spike is also linked to the decline of economic production in the affected areas. The debasements and increase in number of coins circulating caused the intrinsic value of the coins to constantly change, as did the influx of a great quantity of low-quality imitation coins, making investing and loaning money a highly risky proposition. With a decline in investment and loaning, moreover, there would follow a decline in the production supported by such investment. As noted above, our evidence fits this model well, since there appears to have been a general trend away from investment and the establishment of endowment funds over the course of the third century leading into the early fourth century, when the successive deflationary reforms of Aurelian and Diocletian re-established some semblance of monetary and economic order. Again, the contrast with the southern Empire is striking. That region was able not only to maintain a high degree of economic activity, but even further to develop its productive capacity during this time, phenomena which required large amounts of investment and, of course, a stable economic and financial environment. This economic prosperity was, therefore, inextricably linked with

the relatively stable and high quality currency that continued to circulate in the region, itself tied up with the relative lack of a large, disruptive military force in the area.

So far, then, the evidence concerning market activity, monetary transactions, and the overall health of different regional economies during the third century support the picture of Roman economic development advanced in this work. The factors identified as being crucial to the Empire's economic florescence in the early imperial period all underwent significant alterations during the century or so leading up to the turmoil of the third century. This includes, notably, the same things I have been looking at throughout this book—the investment, the circulation of money and the creation of credit, and sociopolitical norms leading to economically productive activity including urban development. What is even more interesting is that exploring these factors with a consideration not only of the temporal dynamics, but also of regional differences has illuminated the ways that northern Europe became economically distinct from the South during both the expansion of the early Empire as well as, and to an even greater extent, during the third century decline. This is really a critical point, as such regional differences have not featured prominently in debates about the Roman economy of any period.

To enhance our understanding even further and to continue to test the validity of the factors identified as being causal to both the advance and decline of these regional economies, it is worth looking closely at some of the other material that concerns Rome's economic activity to see if these putative changes are visible in this evidence as well. Importantly, we will see that the dynamics of evidence concerning production and exchange in the northern and southern halves of the western Empire follow the same regional patterns as discussed above.

4 Production and Exchange

It is worth restating what a dramatic rise in the production and exchange of consumer goods was experienced throughout the Empire from the later Republican period through the early Empire. In earlier chapters, I note that our material evidence for this is unmistakable. Some of the most visible remains from the Roman world are the various types of ceramic goods that were produced in staggering quantities, both vessels to transport other goods, namely *amphorae*, and items valued in their own right such as bowls, plates, jugs, and lamps. Similar evidence concerns things like textiles, dyes and paints, marble and other construction materials, fish sauce, nuts, fruits and legumes, etc. We saw also

how building, particularly urban building, boomed in certain areas in the early imperial period, offering facilities for the production of these goods as well as new housing and infrastructure to support an expanding population and of course luxurious accommodation for Rome's increasingly-wealthy landowning elite. But what happened to all of this in the third century? If the factors identified as being significant for leading to this increased productivity in the early period, then changes in these factors from the late second to mid third century CE ought to be manifested in concomitant changes in the evidence for productivity and exchange.

Critically, there is substantial evidence for this. The production of many exchangeable goods tapered off significantly in northern Europe during the mid to late second century. This is seen most clearly from the ceramic evidence. The provinces of Gaul and, to a lesser extent, Britain, had been active centers from late Republican times, producing a large quantity of ceramics, both fine-ware and transport *amphorae*, for local as well as inter-regional distribution. This production, however, fell off considerably in the later part of the second century and was nearly absent for most of the third, except for limited production restricted to regional distribution. While it is, admittedly, difficult to tie ceramic manufacturing directly to other aspects of the economy, ceramic material is nevertheless a very useful proxy for economic activity more broadly. What is undeniable is that there is a strong relationship between the ability to produce a surplus of goods that are transported in ceramics to other regions and general economic well-being. It is undeniable also that northern Europe suffered from a significant decline in productivity and exchange at about the same time as the other disruptive factors discussed above that ultimately led to the region's problems in the mid third century.

Again, the experience in the rest of the western Empire in this regard was quite the opposite of that of northern Europe. Ceramics made in Roman Africa, for instance, feature prominently in assemblages throughout the Mediterranean from at least the late second century CE and lasting until Late Antiquity.[21] This includes in particular fine-wares, which make up a significant portion of the ceramic material from the Eastern Mediterranean, as well as the *amphorae* made in the region to transport the products of African agricultural production, notably olive oil, wine, and fish sauce, among other products. Indeed, not only did the African economy survive the turmoil of the third century that ravaged so many parts of the Empire, but by all indications African production actually

21 D.P. Peacock, Bejaoui, and Ben Lazreg 1990; Fentress et al. 2004; Mackensen 2004; Bonifay 2005; Bes and Poblome 2009.

grew during this time and the region became the most productive area of the Empire, along with, perhaps, Egypt. New centers of ceramic production established in the third and early fourth centuries have been identified particularly in the interior parts of Africa Proconsularis. The region similarly saw a great amount of urban growth along with the development of non-agricultural economic activities such as textile manufacture, dying, fish-salting, etc.[22]

It is not entirely clear whether this high level of productivity remained steady over the entire period, from the second through the seventh centuries, or if there was a slight downturn during the last decades of the third century and the early part of the fourth before the reforms of Diocletian helped re-ignite Africa's regional economy. What is clear is that African fine-wares dominate the Mediterranean market during the majority of this period, as do the *amphorae* made to transport the products of African agricultural production, notably olive oil, wine, and fermented fish sauce. This is especially true of the eastern Mediterranean, including Egypt, Crete, Cyprus, Syria, and Turkey, areas which seem to have begun to replace Italy and the capital of Rome herself as the primary market for African goods. Crucially, much of this African production was geared for export, judging at least by the ceramic evidence. Likewise, many of the facilities for making and treating textiles identified in African cities which were built in the first and second centuries CE survived at least into the fourth century as well, suggesting at least some continuity in the productivity of these areas. There is further evidence that Rome continued to supply Rome with grain and possibly also contributed to the state-directed grain supply sent to Constantinople from the fourth to the sixth centuries CE.[23]

Unfortunately, evidence about building, particularly urban constructions, is very difficult to date precisely, so it is not possible to determine with the requisite accuracy if building programs exhibit the same regional and temporal patterns. Still, as I discuss in Chapter 4, there is a clear fall-off of honorific inscriptions in all areas after the early third century CE, which, though somewhat imprecise, nonetheless accords well with the other evidence (Figure 11). It is also clear that southern Europe and the Mediterranean, specifically North Africa, Spain, and Italy, saw significantly more expansive urban development than most of northern Europe, including public buildings, infrastructure, and facilities for productive activity. Put together, this further supports the claims made here that northern Europe was fundamentally different from the South in its economic makeup, particularly the importance/impact of urban activ-

22 See for instance A. Wilson 2002a, 2002b; Mattingly 2009; Marzano and Brizzi 2009.

23 See e.g. Linn 2012.

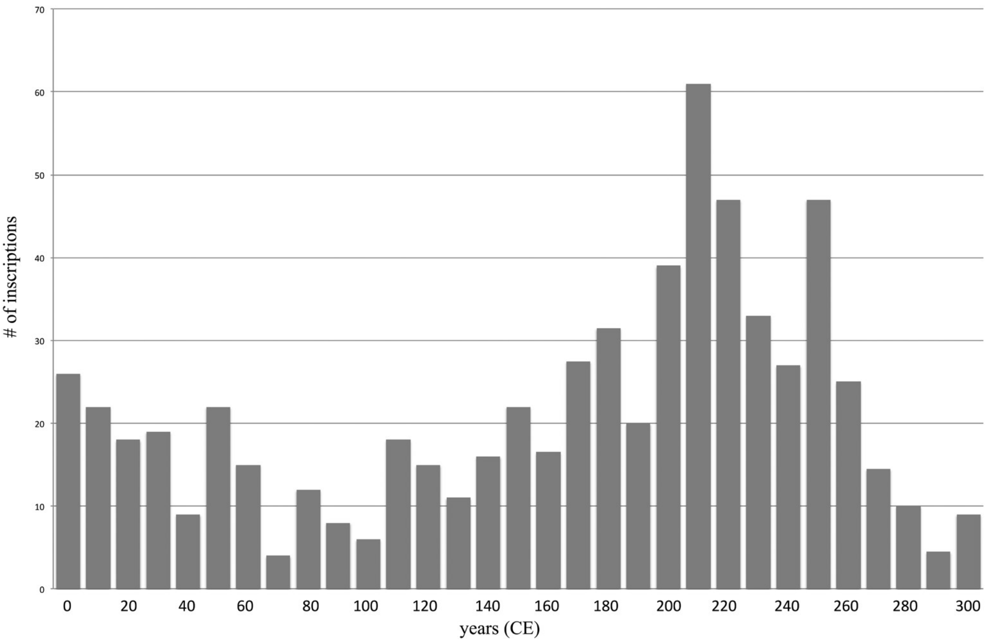

FIGURE 11 *Number of honorific inscriptions datable to 20 years, by 10-year intervals*
AFTER A. WILSON 2011, 166

ity, from the onset of Rome's imperial expansion. These differences were then exacerbated by the changes that began in the late Antonine period, leading eventually to the discordant realities of North and South during the troubles of the mid-third century CE.

5 The End of Roman Prosociality?

In all, the key facets of Rome's economic stability—broad increases in investment, credit and monetary circulation, urban development, overall peace and security—do show some significant changes between the mid-second to mid-third centuries. There are, however, sharp regional differences in these changes. Crucially, the economic changes and the severity of the overall social, political, and military turmoil follow the same regional pattern, indicating at least some correlation between these factors. Furthermore, the timing lines up right, as small but crucial deviations to the economic structure of northern Europe starting in the mid-second century slowly but surely came to manifest themselves as full-blown crises by the 250s, if not before, after successive waves of change and exogenous shocks such as invasion and disease. By extending our

study of Rome's economic development into the third century, then, we get a rare glimpse into a real dynamic pattern, separating out certain events in time. And what we see indicates that these broad economic changes played a causal role in the relative turmoil or stability and recovery that followed in their wake in northern Europe and the southern and western Mediterranean, respectively. All of this supports the conclusions reached in earlier chapters about the structure and functioning of the various elements that underlay the remarkable development of Rome's economic performance in the early Empire.

The one major element of Rome's economic health during this period that I have not yet addressed is the role played by socio-cultural norms. In earlier chapters I stressed the importance of certain cultural values and expectations of behavior, notably the ways that social capital was acquired and prevailing concepts concerning community well-being. The pressure felt by elite Romans interested in pursuing political office or in simply maintaining and justifying their elevated status is a key to understanding the motivation behind so much of their economically beneficial activity. I expressed also the difficulties with trying to assess precisely what these norms were and the impact they had on Rome's economic life. They are certainly more ephemeral than, say, tracing the extent of trade and exchange through the remains of ceramic goods. This makes it extremely problematic to determine if these key socio-cultural features changed during the Antonine period along with the other, more apparent changes that the Empire faced during this period, and so if cultural differences also fit into the explanation of the third century turmoil.

To reiterate, when discussing the importance of social capital seeking and the institutionalized elite competition for local prestige and political prominence at the beginning of this book, I observed how cultural norms like these evolve over long periods and under specific circumstances. Growing from Rome's early history as a small city-state caught in the middle of a chaotic, competitive environment in Italy during the early parts of the first millennium BCE, certain key cultural norms developed and became deeply ingrained in the behavior of Romans: norms of community cooperation, wealthy landowners engaging in civic patronage, and the importance of political leaders being seen as taking care of the needs of the lower classes became firmly established in the ethos of Rome's elite. Over time, Rome's success ended up swelling the ranks and the wealth of elite, raising the stakes of intra-elite competition beyond a sustainable level.[24] During the turmoil at the end of the Republic, elite

24 It is worth noting that this, in fact, has been quite a common problem with large, successful Empires throughout human history. On this, see Turchin 2006; Turchin and Nefedov 2009.

overproduction—among, of course, other factors—helped push this intra-elite competition over assuming these prominent roles over the edge into violent confrontation. The early imperial peace drove a lot of this competition out of Rome herself, diffusing it into the provinces and largely removing the military factor from the equation with the Emperor personally taking sole charge over most of the armed forces. The imperial elite scattered around the various provinces, then, were left with smaller-stakes competitions largely for prestige and economic gain, as described in earlier chapters, with little participation in military matters. This helped transform Rome's traditional socio-cultural systems into more locally-focused ones, restoring as well much of their productive, prosocial side. These local, provincial, mostly urban competitions became part of the foundation of Rome's early imperial economic expansion.

What, then, can be said about these norms during the third century CE? We have seen that Rome's elite, particularly wealthy landowners and Senators in Rome, actually played only a minor role in the political and military events after 235 CE. They stood for the most part helplessly by as military leaders drawn from the sub-elite, or perhaps should be termed elite-aspirants, took charge of the state, acting only to support one ineffective leader against another. This helps to underscore how the overall role and importance of elite, even the politically active, had changed from Rome's foundations, for they no longer had any significant control over military matters. And it was clearly the military power that dominated during this period, as the string of *Soldatenkaisers* clearly attests. We have also seen that all of our evidence points towards the same direction, namely that civic benefaction and support for public works came to a crashing halt. An appealing explanation for this is the great monetary turmoil that occurred during this time, noted above. The numerous debasements made to the currency during the third century as well as the overall increase in the number of coins circulating would have caused the value of money to constantly change. Such volatility would have made investing and loaning money a highly risky proposition. With a decline in investment and loaning, moreover, there would follow a decline in the production supported by such investment as well as the charitable foundations and public goods furnished by the same means. Crucially, this is precisely what the evidence shows; the period of Roman prosociality, with the Empire's wealthiest citizens transmuting at least some small portion of their wealth back into the support and well-being of local populations, seems to have come to a dramatic close.

It is quite appealing, then, to see this monetary turmoil as one of the key 'shocks' that disrupted the normal functioning of the socio-cultural systems supporting elite investment, loaning, and civic benefaction. Unfortunately, the temporal resolution of these changes does not admit for a precise account of

which came first, so it is difficult to assess whether cultural norms changed after, and as a result of, the onset of monetary troubles or *vice versa*. It is fairly clear, however, that the two were closely correlated, as both occurred at about the same time and, importantly, followed the same regional patterns. We saw this with the fact that the southern, Mediterranean provinces saw much lighter and later monetary problems than in northern Europe as well as a quicker recovery. Likewise, the same pattern holds in most of the evidence we have for this prosocial behavior, notably inscriptions detailing building programs and elite benefactions. Still, even North Africa, which had the clearest and quickest socio-economic recovery of any western province after Aurelian's reunification, does not seem to have restored its former level of elite benefaction, although certainly its productivity in many areas remained high into the seventh century.

It is particular interesting to speculate on the effect of these cultural dislocations for the history of the later Empire as well. It has been noted by some scholars that the third century CE saw a fairly radical alteration in Rome's administrative system. One notable change was the rise of provincial overseers appointed by the Emperor (*curatores rei publicae*).[25] The creation of this office seems to have been an attempt by the imperial authorities to assert greater control over the fiscal activities of provincial towns. One of the main reasons why this intervention by the Emperor was needed is because elites were curtailing their spending on the pursuit of public office. The failure of provincial towns in the West, including in Africa and Spain, to continue to support municipal life, then, led to the state's attempts to assert more direct control over the financial administration. By the end of the third century and into the fourth century, more severe measures were taken, including Aurelian and Diocletian's deflationary policies, Diocletian's reorganization of the provincial boundaries of the region, and provincial governors and other administrative officers became more directly tied to the imperial state. This period, in other words, saw a sharp bureaucratization of the Empire.[26] The blurred lines between public and private actor noted in Chapter 4 became much more distinct, with the state taking far greater direct control over municipal life in the provinces. The state was, in essence, picking up the slack left by the altered customs and incentives of the Empire's provincial elite.

Intriguingly, the development of these new elite cultural norms after the third century crises away from civic engagement and the pursuit of traditional Roman values and offices closely coincides with the increase in popularity of

25 Camodeca 1975; Burton 1979.
26 Eich 2005, 2015.

Christianity, especially among Rome's urban elite.[27] Suggesting that Christianity's rise to dominance in the Roman world was part of a longer evolution of cultural, political, and economic traits stretching back hundreds of years is tantalizing, though, admittedly, highly speculative. It is also, unfortunately, beyond the scope of this work. But the origins of Rome's long march into Late Antiquity deserve further attention, focusing especially on how deep-seated and interconnected were all of the factors that led to the events of the third century and beyond. The role of cultural traits and norms in incentivizing—or perhaps constraining—the activity of people along with the social, political, and economic outcomes of their behavior deserves much further scrutiny in general, concerning not only imperial Rome but all past societies. This chapter has hopefully laid the foundation for such future research, highlighting how taking a long view of a society like Rome can help us to tease apart factors that play a significant and lasting role in the state of economic productivity, political stability, and social well-being. Understanding the roots of Rome's economic dynamics, both the rises and the falls, can shed a great deal of light on the course of Roman history. Just as importantly, outlining these dynamics will help to make the Roman case available and useful for inclusion in more broadly focused studies of social-scientific and economic history. As I said in the Introduction, the Roman world has much to offer our understanding of the general principles of economic development and well-being.

27 Rhee 2005; Fredriksen 2006; Becker 2011.

Conclusion: Rome's Place in a Global History of Development

This book has attempted to bring a novel perspective to the study of the imperial Roman economy. I chose to concentrate not on close readings of small bodies of evidence, or even counting up material to get absolute numbers or to perform quantitative analysis. Much excellent scholarship taking those approaches have been done in recent years, and I have no desire nor is there need to redo that research. My goal, rather, is to provide a synthetic treatment of this earlier work, looking to bring together what is really an enormous amount of material, compressed and summarized into digestible amounts, to draw out some broad patterns. The chapters here offer interrelated accounts of different themes, focusing on the evolution of prosocial cultural traits and how these norms along with various institutional features incentivized the activities of Rome's wealthy, landowning elite. I have attempted to show how this activity helped create and maintain networks of prestige and social capital formation, of money and credit circulation, of investment into manufacturing and urban services, of infrastructural development; and of how these interlocking developments helped overall expansion while also tying together production and consumption, all of which led the way to an overall expansion of productivity and of the general material wealth enjoyed throughout the Empire in the first few hundred years CE.

In taking a Big Picture approach to the topic, I have attempted to draw on some of the methods and arguments recently made in social science research. Outlining in broad strokes how a financially complex, heavily monetized, highly urbanized ancient economy could look, how it could be supported by state regulations, social customs, and elite activity, and how it could manifest itself in the material remains available to modern scholars helped frame the survey of Rome's material evidence. Each chapter explored different sets of material, ranging from epigraphic and legal evidence concerning elite benefaction, the material manifestations of monetization and investment into productive activities, urban development and the complex overlap of public/private interests in the Roman world, and finally the nature of growth and well-being. Summing up all of the arguments put forward, in the last chapter I extended discussion of these key issues into the third century CE, later than most work on the imperial economy. My reasoning for this is that if the factors identified as the driving forces of Rome's economic system development in the early Empire were indeed the crucial ones, then they should exhibit some change right before we

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start to see changes in the overall productivity and effectiveness of this system. And this is, indeed, what we have seen here, though with important regional differences that help explain the history of the Empire in Late Antiquity and beyond.

Many of the claims made in this work may appear strange or even controversial to many historians of imperial Rome. I engage in a good deal of summarizing, not delving into the fine details of a small selection of material. I make fairly sweeping statements traversing huge bodies of evidence. Even when examining and quantifying certain material relatively thoroughly, as for instance with endowment fund inscriptions and the numismatic material Roman Africa, my aim is not to explicate all of the different aspects of the material itself; my intent is rather to survey, to summarize, to mine the evidence for what it might reveal about the larger trends and functions of the imperial economy. In doing so, however, I admittedly skip over a fair amount of detail. Relying on the tremendous work that has already been done cataloguing and explaining various types of material, I favor instead more synthetic analysis. I try to bring together as much information as possible to help assess different readings of the full range and scope of Rome's economic activity, concentrating on the relationship between various factors and the underlying structures revealed by material epiphenomena. This type of synthetic approach holds great potential for answering the lingering questions that we have about the workings of this important ancient state. The approach, it must be stressed, should *not* be seen as a replacement or improvement on more traditional, fine-grained analysis. Having different work focus on different levels of abstraction is, in fact, the most fruitful way to conduct historical research. The present work merely scratches the surface at what we can do with combining and reexamining some of the evidence from the ancient world.

My aim with this book is to explore some larger issues and themes, not just the ones that matter for Rome, but specifically the sort of things that seem to matter for *all* societies. It was with this objective in mind that I chose the main topics of study here, exploring the way that money and financial instruments were formed and how they operated, the impact of this monetization and investment along with the place of certain kinds of demand in sustaining market activity, the role of the state in constraining or incentivizing different kinds of activity, and the interrelationship between money, markets, and urban development. All of these features can be found in nearly any work of economic history, regardless of the time or world region of the societies under study.

In some respects, Rome looks like other large ancient imperial states. Early imperial China, Pharaonic Egypt, Mauryan India, as well as Neo-Babylonian, Achaemenid, and Parthian Persia were all great imperial states that supported

huge populations, oversaw intense agrarian production, saw some large urban centers develop, and allowed for sharp disparities of wealth and privilege between classes. In other ways, however, Rome stands apart, particularly in the type and scale of its financial activity and market development, its urbanization, and overall productivity. In these ways the Empire certainly resembles early modern European states on the eve of industrialization, as many commentators have asserted. Yet it is not quite so clear that Rome was as precocious as comparisons with pre-industrial Europe make it out to be. Technological limitations put a cap on labor productivity, in spite of gains in specialization. Manufacturing enjoyed a florescence in the early imperial period, though wages for unskilled labor seem to have remained low, while the scale of non-agrarian sectors and especially of oversees trade was certainly nothing like that seen in northern Europe by the seventeenth century. Furthermore, Rome's monetary and financial systems were quite intricately tied with broader socio-political forms. While this is always true, in the Roman case this resulted in a rather precarious situation, for the health and maintenance of the entire system relied to a great extent on elite behavior, on the rather loose hand of the state, and on the peace and security known during the first two centuries CE. When these features had collapsed or morphed by the third century, the economics were dramatically affected. Early modern European states' institutional support for private economic activity was never mirrored in antiquity. On the other hand, as we saw, the living standards and overall well-being of many of Rome's inhabitants was high by ancient standards, especially in the access to various sorts of public goods. In this way, it actually resembles Medieval Islamic states, which had developed similar customs of elite prosociality and care for the citizen body.

In all we see that comparing Rome to other states offers a mixed bag; some elements of the imperial economy look like other ancient states in the Mediterranean and Asia, some like the post-antique Near East, and others do indeed resemble early modern Europe. This should not be seen as a disappointing conclusion, for it points to the importance of conducting careful, systematic study of all of the various aspects of an economic system across cultures in order to draw out real patterns and long-run dynamics. Rome's place in a global history of development, then, is the same as every other historical society; it offers a series of events and dynamic relationships between factors that can be used to test the predictions of different theories, illustrate various types of economic processes, and highlight the areas where unique contextual circumstance deviate from the overall pattern. For, it is not only that broad, cross-cultural studies of economic growth and well-being development can benefit from exploring the Roman case, but exploring the paths taken by other societies can help clar-

ify many aspects of the Roman economy, even if this is just prompting us to ask the right questions.

This book will hopefully be of use and of interest to those wanting to learn more about the economic development of one of history's greatest Empires; a useful take on these issues for students, specialists, and general history enthusiasts. Tracing out in broad strokes how the dynamics of many different factors can all be brought together and made sense of in a single, coherent account differs from much previous work in the field, supplementing and complimenting more directed study with a synthetic view of the topic. Beyond this, my hope is that this book will prove useful in large, cross-cultural, comparative historical research. My survey and discussion of the Roman material, fitting the evidence to a coarse description of how the different facets were all interrelated, is intended to be of use to this type of work in the future. At several places in the previous pages, I hinted at ways that Rome's economic development compared to historical societies from some of these other regions. These were just that, however: hints. Further work, specifically bringing together massive amounts of quantitative as well as qualitative historical information from a large number of samples, is needed to advance our understanding of the general causes and types of economic advance and the ways that social well-being can be improved. Such work can also help test more explicit causal models of economic growth and development. Certainly, as should by now be quite clear, the Roman Empire has much to say on these important topics and really should become a mainstay of broad research on global development histories. These ambitions are beyond the scope of this book—they require, in fact, collaborative, cross-disciplinary research among historians of different fields, social scientists of all kinds, and even biologists and statisticians. For this, though, stay tuned ...

APPENDIX 1

List of Inscriptions from the Western Empire Recording Interest being Drawn

The following table lists the inscriptions used for this study which record some interest being returned from some principal outlay. I do not list the dates of the inscriptions, as most are unknown. All inscriptions here, however, are either securely or can be reasonable assumed to have been set up during the first two and a half centuries CE. The catalogue numbers referenced in the above chapters refer to the '#' here. Each inscription is listed with the Roman province in which it was found as well as the findspot—the town or city from where the inscription came (the Latin name is given where applicable, otherwise modern names are used). 'Type' refers to whether the interest taken from the endowment's principle was described in the inscription's text using the Latin phrase for interest (*ex usuris*), or the more generic term meaning return (*ex reditu*), or where both are used. I also note the instances where some piece of property is specifically mentioned as forming part of the principle recording (land) in the 'Type' column. The 'Reference' column gives the standard bibliographic note for the inscription. The abbreviations used are:

AE	*L'Année Épigraphique*
CIL	*Corpus Inscriptionum Latinarum*
ILS	*Inscriptiones Latinae Selectae*
IRT	*The Inscriptions of Roman Tripolitania*
CAG	*Carte archéologique de la Gaule*
Sup.It	*Supplementa Italica*
Inscr.Aqu	*Inscriptiones Aquileiae*
ILSicilia	'Iscrizioni latine nuove e vecchie della Sicilia', *Epigraphica* 51

#	Province	Findspot	Type	Reference
1	Africa Proconsularis	Gor	*ex usuris*	CIL 8.12422
2	Africa Proconsularis	Gor	*ex usuris & ex reditu*	CIL 8.12421
3	Africa Proconsularis	Hadrumetum	*ex usuris*	AE 1915 78
4	Africa Proconsularis	Hippo Diarrhytus	*ex usuris*	CIL 8.14334
5	Africa Proconsularis	Mactaris	*ex usuris*	CIL 8.11813
6	Africa Proconsularis	Mustis	*ex usuris*	AE 1968 588

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(cont.)

#	Province	Findspot	Type	Reference
7	Africa Proconsularis	Mustis	*ex usuris*	CIL 8.15578
8	Africa Proconsularis	Oea	*ex usuris*	AE 1942/43 1
9	Africa Proconsularis	Sabratha	*ex usuris*	IRT 140
10	Africa Proconsularis	Sicca Veneria	*ex usuris*	CIL 8.1641
11	Africa Proconsularis	Sufes	*ex usuris*	CIL 8.262
12	Africa Proconsularis	Theveste	*ex usuris*	CIL 8.1845
13	Africa Proconsularis	Theveste	*ex usuris*	CIL 8.1887
14	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.1503
15	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.1495
16	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.1496
17	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.1500
18	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.26485
19	Africa Proconsularis	Thugga	*ex reditu*	CIL 8.26591
20	Africa Proconsularis	Uchi Maius	*ex usuris*	CIL 8.26275
21	Africa Proconsularis	Zucchar	*ex reditu*	CIL 8.924
22	Alpes Graiae	Tarantasia	*ex reditu*	CIL 12.5709
23	Alpes Maratimae	Cemenelum	*ex usuris*	CIL 5.7906
24	Baetica	Hispalis	*ex usuris*	CIL 2.1174
25	Baetica	Oducia	*ex usuris*	CIL 2.5.1330
26	Belgica	Beda	*ex usuris*	CIL 13.4132
27	Gallia Narbonensis	Alba Helviroum	*ex usuris*	AE 1965 144
28	Gallia Narbonensis	Aquae Sextiae	*ex usuris*	CIL 12.530
29	Gallia Narbonensis	Arausio	*ex usuris*	AE 1955 83c
30	Gallia Narbonensis	Arausio	*ex reditu* (*land*)	AE 2009 828
31	Gallia Narbonensis	Arelate	*ex usuris*	CIL 12.670
32	Gallia Narbonensis	Arelate	*ex usuris*	CIL 12.731
33	Gallia Narbonensis	Dea Augusta Vocontiorum	*ex usuris*	CAG 26 (313)
34	Gallia Narbonensis	Dea Augusta Vocontiorum	*ex usuris & ex reditu*	CIL 12.1587
35	Gallia Narbonensis	Dea Augusta Vocontiorum	*ex reditu* (*land*)	CIL 12.1657
36	Gallia Narbonensis	Narbo	*ex usuris*	CIL 12.4393
37	Gallia Narbonensis	Vasio	*ex usuris*	CIL 12.1357
38	Germania Superior	Minnodunum	*ex usuris*	CIL 13.5042
39	Germania Superior	Minnodunum	*ex usuris*	CIL 13.5043
40	Germania Superior	Minnodunum	*ex usuris & ex reditu*	CIL 13.5043
41	Germania Superior	Mogontiacum	*ex usuris*	AE 1914 110
42	Germania Superior	Niederbieber	*ex usuris*	CIL 13.7751

#	Province	Findspot	Type	Reference
43	Hispania Citerior	Barcino	*ex usuris*	CIL 2.4511
44	Hispania Citerior	Barcino	*ex usuris*	CIL 2.4514
45	Hispania Citerior	Ebesus	*ex usuris*	CIL 2.3664
46	Hispania Citerior	Sacedon	*ex reditu*	CIL 2.3167
47	Hispania Citerior	Uxama	*ex usuris*	AE 2003 965
48	Italia	Aletrium	*ex reditu*	CIL 10.5809
49	Italia	Altinum	*ex reditu* (*land*)	CIL 5.2176
50	Italia	America	*ex usuris*	CIL 11.4391
51	Italia	Amiternum	*ex usuris*	CIL 9.4215
52	Italia	Aquileia	*ex usuris*	InscrAqu.1.690
53	Italia	Arilica	*ex reditu*	CIL 5.4016
54	Italia	Ariminum	*ex reditu* (*land*)	CIL 11.379
55	Italia	Atina	*ex reditu*	CIL 10.5056
56	Italia	Auxium	*ex reditu* (*land*)	CIL 9.5845
57	Italia	Auxium	*ex reditu*	CIL 9.5854
58	Italia	Bergomum	*ex usuris*	CIL 5.5134
59	Italia	Bononia	*ex reditu*	CIL 11.720
60	Italia	Brixia	*ex reditu* (*land*)	CIL 5.4489
61	Italia	Brixia	*ex usuris*	AE 1977 298
62	Italia	Brixia	*ex usuris*	CIL 5.4203
63	Italia	Brixia	*ex usuris*	CIL 5.4448
64	Italia	Brixia	*ex usuris*	CIL 5.4410
65	Italia	Brixia	*ex usuris*	CIL 5.4449
66	Italia	Brixia	*ex usuris*	AE 1991 823
67	Italia	Capena	*ex usuris*	AE 1954 168
68	Italia	Caposele	*ex reditu* (*land*)	CIL 10.444
69	Italia	Capua	*ex reditu*	CIL 10.3851
70	Italia	Capua	*ex reditu*	CIL 10.3852
71	Italia	Comum	*ex reditu*	CIL 5.5272
72	Italia	Comum	*ex reditu*	CIL 5.5279
73	Italia	Corfinum	*ex usuris*	CIL 9.3160
74	Italia	Croton	*ex usuris*	CIL 10.107
75	Italia	Cures Sabini	*ex usuris*	CIL 9.4971
76	Italia	Fabrateria Vetus	*ex usuris*	CIL 10.5654
77	Italia	Fabrateria Vetus	*ex usuris*	CIL 10.5657
78	Italia	Fabrateria Vetus	*ex usuris*	AE 1979 141
79	Italia	Feltria	*ex usuris*	ILS 9420

(cont.)

#	Province	Findspot	Type	Reference
80	Italia	Ferentinum	*ex reditu* (*land*)	CIL 10.5853
81	Italia	Firmum Picenum	*ex reditu*	CIL 9.5376
82	Italia	Gabii	*ex usuris*	CIL 14.2793
83	Italia	Gabii	*ex reditu*	CIL 14.2795
84	Italia	Lanuvium	*ex usuris*	CIL 14.2101
85	Italia	Lavinium	*ex usuris*	AE 1998 282
86	Italia	Libarna	*ex reditu*	AE 1993 731
87	Italia	Ligures Baebiani	*ex usuris*	CIL 9.1455
88	Italia	Lupiae	*ex reditu*	CIL 9.23
89	Italia	Mediolanum	*ex reditu*	CIL 5.5907
90	Italia	Mediolanum	*ex usuris*	CIL 5.5840
91	Italia	Mevania	*ex reditu*	CIL 11.5047
92	Italia	Misenum	*ex reditu*	AE 1993 468
93	Italia	Misenum	*ex reditu*	AE 2000 344
94	Italia	Montalcino	*ex usuris*	CIL 11.2596
95	Italia	Nese	*ex reditu*	CIL 5.5203
96	Italia	Novaria	*ex usuris*	CIL 5.6525
97	Italia	Opitergium	*ex usuris & ex reditu*	CIL 5.1978
98	Italia	Opitergium	*ex usuris*	CIL 5.1978
99	Italia	Ostia Antica	*ex usuris*	AE 1987 198
100	Italia	Ostia Antica	*ex usuris*	CIL 14.246
101	Italia	Ostia Antica	*ex usuris*	CIL 14.350
102	Italia	Ostia Antica	*ex usuris*	CIL 14.353
103	Italia	Ostia Antica	*ex usuris*	CIL 14.367
104	Italia	Ostia Antica	*ex usuris*	CIL 14.431
105	Italia	Ostia Antica	*ex usuris*	AE 1940 62
106	Italia	Ostia Antica	*ex reditu* (*land*)	AE 1940 94
107	Italia	Patavium	*ex reditu*	CIL 5.2090
108	Italia	Patavium	*ex usuris*	CIL 5.2090
109	Italia	Petelia	*ex usuris*	CIL 10.114
110	Italia	Petelia	*ex usuris*	ILS 6468
111	Italia	Pisae	*ex reditu*	CIL 11.1436
112	Italia	Pisaurum	*ex usuris*	CIL 11.6377
113	Italia	Pitinum Mergens	*ex reditu*	CIL 11.5963
114	Italia	Pompei	*ex usuris*	CIL 4.4528
115	Italia	Pompei	*ex usuris*	CIL 4.8203

#	Province	Findspot	Type	Reference
116	Italia	Pompei	*ex usuris*	CIL 4.8204
117	Italia	Pompei	*ex usuris*	CIL 4.10106
118	Italia	Pompei	*ex usuris*	AE 1951 163
119	Italia	Puteoli	*ex reditu*	CIL 10.1880
120	Italia	Ravenna	*ex reditu*	CIL 11.126
121	Italia	Reate	*ex reditu*	CIL 9.4691
122	Italia	Rome	*ex usuris*	CIL 6.1872
123	Italia	Rome	*ex usuris*	CIL 6.1925
124	Italia	Rome	*ex usuris*	CIL 6.9254
125	Italia	Rome	*ex usuris* & *ex reditu*	CIL 6.10234
126	Italia	Rome	*ex usuris*	CIL 6.10297
127	Italia	Rome	*ex usuris*	CIL 6.29700
128	Italia	Rome	*ex reditu*	CIL 6.8652
129	Italia	Rome	*ex reditu* (*land*)	CIL 6.10248
130	Italia	Rome	*ex reditu* (*land*)	CIL 6.10411
131	Italia	Sassina	*ex reditu*	CIL 11.6520
132	Italia	Saturnia	*ex usuris*	CIL 11.2650
133	Italia	Setia	*ex usuris*	CIL 10.6465
134	Italia	Sinuessa	*ex usuris*	AE 1979 147
135	Italia	Sizzano	*ex reditu*	CIL 5.6587
136	Italia	Spoletium	*ex reditu*	CIL 11.4789
137	Italia	Spoletium	*ex reditu*	CIL 11.4815
138	Italia	Suasa	*ex reditu*	CIL 11.6173
139	Italia	Sulmo	*ex usuris*	Sup.It.4.S 50
140	Italia	Tarracina	*ex reditu*	CIL 10.6328
141	Italia	Tergeste	*ex reditu*	CIL 5.532
142	Italia	Ticinum	*ex usuris*	CIL 5.6436
143	Italia	Tolentinum	*ex reditu*	CIL 9.5568
144	Italia	Toscolano-Maderno	*ex reditu*	CIL 5.4871
145	Italia	Vardagate	*ex reditu* (*land*)	CIL 5.7454
146	Italia	Veleia	*ex usuris* & *ex reditu*	CIL 11.1147
147	Italia	Volsinii	*ex usuris*	CIL 11.7299b
148	Lugudunensis	Ambarri	*ex reditu*	CIL 13.2465
149	Lugudunensis	Lugudunum	*ex reditu*	CIL 13.1724
150	Mauretania Caesariensis	Equizetum	*ex usuris*	AE 1898 87
151	Numidia	Cirta	*ex reditu* (*land*)	CIL 8.6995
152	Numidia	Diana	*ex usuris*	CIL 8.4584

(cont.)

#	Province	Findspot	Type	Reference
153	Numidia	Lambaesis	*ex usuris*	CIL 8.3284
154	Sicily	Tauromenium	*ex usuris*	ILSicilia 27
155	Sicily	Thermae Himeraeae	*ex usuris*	CIL 10.7360

APPENDIX 2

List of Building Inscriptions from the North African Provinces Recording the Sponsor

The following table lists the inscriptions found in the Roman provinces of North Africa which record some building project and note the type of sponsorship. I do not list the dates of the inscriptions, as most are unknown. All inscriptions here, however, are either securely or can be reasonable assumed to have been set up during the first two and a half centuries CE. The catalogue numbers referenced in the above chapters refer to the '#' here. Each inscription is listed with the Roman province in which it was found as well as the findspot—the town or city from where the inscription came (the Latin name is given where applicable, otherwise modern names are used). 'Sponsor' notes the position of the building's sponsor when known. 'Personal Funding' and 'Public Funding' indicate whether the inscription makes explicit reference to the source of funds used for part or all of the construction costs. The 'Reference' column gives the standard bibliographic note for the inscription. The abbreviations used are:

AE	*L'Année Épigraphique*
CIL	*Corpus Inscriptionum Latinarum*
ILS	*Inscriptiones Latinae Selectae*
ILAlg	*Inscriptions latines d'Algérie*
BCTH	*Bulletin Archéologique du Comité des Travaux Historiques*
ILAfr	*Inscriptions latines d'Afrique*
IRT	*The Inscriptions of Roman Tripolitania*
AfrRom	*Africa Romana*

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
1	Africa Proconsularis	*unknown*	individual	YES		AE 1997.1725
2	Africa Proconsularis	Agbia	individual			CIL 8.1548
3	Africa Proconsularis	Agbia	individual	YES		CIL 8.1546
4	Africa Proconsularis	Agbia	individual	YES		CIL 8.27382
5	Africa Proconsularis	Agger	*unknown*			CIL 8.12144
6	Africa Proconsularis	Agger	*unknown*			CIL 8.12144
7	Africa Proconsularis	Ain Berda	emperor			AE 1904.21

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(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
8	Africa Proconsularis	Ain Djal	individual			CIL 8.25377
9	Africa Proconsularis	Ain Lebha	individual	YES		AE 1930.42
10	Africa Proconsularis	Ain Suda	individual	YES		CIL 8.17313
11	Africa Proconsularis	Ain Taki	collective			CIL 8.27416
12	Africa Proconsularis	Al Qannarah	*unknown*			CIL 8.14758
13	Africa Proconsularis	Al Qaryah ash Sharqiyah	individual			CIL 8.3
14	Africa Proconsularis	Al Qaryah ash Sharqiyah	individual			AE 1973.573
15	Africa Proconsularis	Althiburos	collective			CIL 8.1828
16	Africa Proconsularis	Althiburos	collective	YES		CIL 8.27769
17	Africa Proconsularis	Ammaedara	individual			AE 1992.1766
18	Africa Proconsularis	Ammaedara	collective		YES	CIL 8.309
19	Africa Proconsularis	Ammaedara	individual	YES		AE 1999.1781
20	Africa Proconsularis	Ammaedara	individual			AE 1999.1788
21	Africa Proconsularis	Ammaedara	individual			AE 1999.1787
22	Africa Proconsularis	Apisa Minus	collective			AE 1982.931
23	Africa Proconsularis	Aradi	individual			AE 1904.58
24	Africa Proconsularis	Aradi	collective		YES	AE 1903.241
25	Africa Proconsularis	Aradi	individual			AE 2004.1798
26	Africa Proconsularis	Aradi	individual			CIL 8.23861
27	Africa Proconsularis	Aradi	collective			AE 1980.918
28	Africa Proconsularis	Aradi	individual	YES		CIL 8.23867
29	Africa Proconsularis	Aubuzza	individual	YES		CIL 8.16368
30	Africa Proconsularis	Aunobari	individual			CIL 8.15562
31	Africa Proconsularis	Aunobari	individual	YES		CIL 8.15562
32	Africa Proconsularis	Avedda	individual	YES		AE 1973.605
33	Africa Proconsularis	Avitta Bibba	combo	YES		CIL 8.805
34	Africa Proconsularis	Avitta Bibba	individual			CIL 8.12278
35	Africa Proconsularis	Avitta Bibba	collective		YES	CIL 8.801
36	Africa Proconsularis	Avitta Bibba	individual	YES		CIL 8.805
37	Africa Proconsularis	Avitta Bibba	collective	YES		CIL 8.803
38	Africa Proconsularis	Avula	individual	YES		CIL 8.710
39	Africa Proconsularis	Bagat	*unknown*			CIL 8.11986
40	Africa Proconsularis	Belab	collective		YES	CIL 8.27432

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
41	Africa Proconsularis	Belalis Maior	individual			AE 1978.855
42	Africa Proconsularis	Belalis Maior	*unknown*			CIL 8.14436
43	Africa Proconsularis	Ben Hassen	individual			CIL 8.24044
44	Africa Proconsularis	Biniana	individual			CIL 8.73
45	Africa Proconsularis	Bir Laafou	individual	YES		AE 1994.1887
46	Africa Proconsularis	Bisica	individual			CIL 8.12285
47	Africa Proconsularis	Bisica	individual			CIL 8.23880
48	Africa Proconsularis	Bordj Abd el Melek	individual	YES		CIL 8.15746
49	Africa Proconsularis	Bordj Abd el Melek	individual	YES		CIL 8.15477
50	Africa Proconsularis	Bou Khchim	individual			AE 1949.54
51	Africa Proconsularis	Bou Scha	individual			CIL 8.23965
52	Africa Proconsularis	Brighita Sucubi	*unknown*			CIL 8.794
53	Africa Proconsularis	Bu Auya	individual			CIL 8.16400
54	Africa Proconsularis	Bulla Regia	individual	YES		AE 2004.1874
55	Africa Proconsularis	Bulla Regia	individual	YES		CIL 8.25532
56	Africa Proconsularis	Bulla Regia	individual	YES		CIL 8.25512
57	Africa Proconsularis	Bulla Regia	combo			CIL 8.25515
58	Africa Proconsularis	Bulla Regia	individual		YES	CIL 8.25520
59	Africa Proconsularis	Bulla Regia	individual		YES	CIL 8.25521
60	Africa Proconsularis	Bulla Regia	individual	YES		CIL 8.25533
61	Africa Proconsularis	Calama	individual			AE 2010.1806
62	Africa Proconsularis	Carpis	individual			CIL 8.24106
63	Africa Proconsularis	Carthage	individual	YES		CIL 8.1141
64	Africa Proconsularis	Carthage	individual			CIL 8.24977
65	Africa Proconsularis	Carthage	individual			CIL 8.24521
66	Africa Proconsularis	Carthage	individual			ILAfr 403
67	Africa Proconsularis	Carthage	individual	YES		AE 1914.87
68	Africa Proconsularis	Carthage	*unknown*			ILAfr 357
69	Africa Proconsularis	Carthage	*unknown*	YES		ILAfr 400
70	Africa Proconsularis	Carthage	collective			AE 1957.72
71	Africa Proconsularis	Carthage	individual		YES	AE 1928.24
72	Africa Proconsularis	Carthage	*unknown*			CIL 8.12513
73	Africa Proconsularis	Carthage	individual		YES	CIL 8.12569

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
74	Africa Proconsularis	Carthage	*unknown*			CIL 8.24582
75	Africa Proconsularis	Castellum Biracsaccarensium	collective		YES	CIL 8.23849
76	Africa Proconsularis	Chabet er Ressas	individual	YES		CIL 8.28031
77	Africa Proconsularis	Chaouat	individual			CIL 8.25371
78	Africa Proconsularis	Chusira	individual	YES		AE 1946.45
79	Africa Proconsularis	Chusira	individual	YES		CIL 8.698
80	Africa Proconsularis	Chusira	*unknown*			CIL 8.12127
81	Africa Proconsularis	Cillium	individual			CIL 8.210
82	Africa Proconsularis	Cincari	collective			AE 1915.40
83	Africa Proconsularis	Cincari	individual			AE 2003.2004
84	Africa Proconsularis	Curubis	individual			CIL 8.977
85	Africa Proconsularis	Curubis	individual	YES		AE 1908.162
86	Africa Proconsularis	Curubis	individual			CIL 8.979
87	Africa Proconsularis	Dashrat al Qulayah	individual			CIL 8.25955
88	Africa Proconsularis	Debbik	individual			CIL 8.14792
89	Africa Proconsularis	Derirat	collective			AE 1909.233
90	Africa Proconsularis	Djellula	individual	YES		CIL 8.12111
91	Africa Proconsularis	Douar Khima	individual	YES		CIL 8.26400
92	Africa Proconsularis	El Djemel	emperor			CIL 8.10056
93	Africa Proconsularis	El Ust	individual			CIL 8.16417
94	Africa Proconsularis	Furni	collective	YES		CIL 8.12037
95	Africa Proconsularis	Furni	collective	YES		CIL 8.12037
96	Africa Proconsularis	Furni	*unknown*			CIL 8.12038
97	Africa Proconsularis	Furni	individual	YES		CIL 8.12039
98	Africa Proconsularis	Furni	*unknown*			CIL 8.14753
99	Africa Proconsularis	Gafsa	emperor			CIL 8.101
100	Africa Proconsularis	Gafsa	emperor			CIL 8.102
101	Africa Proconsularis	Gafsa	individual			CIL 8.98
102	Africa Proconsularis	Gafsa	individual	YES		CIL 8.120
103	Africa Proconsularis	Gafsa	individual			CIL 8.100
104	Africa Proconsularis	Gales	collective		YES	CIL 8.757

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
105	Africa Proconsularis	Gammart	emperor			BCTH 1943/45.104
106	Africa Proconsularis	Gasr Elluss	*unknown*			CIL 8.950
107	Africa Proconsularis	Gens Bacchuiana	collective	YES		CIL 8.12331
108	Africa Proconsularis	Gens Bacchuiana	collective	YES		CIL 8. 12331
109	Africa Proconsularis	Ghardimaou	individual			CIL 8.14728
110	Africa Proconsularis	Gholaia	individual			AE 1991.1620
111	Africa Proconsularis	Gholaia	individual			AE 1995.1641
112	Africa Proconsularis	Gholaia	combo			AE 1972.677
113	Africa Proconsularis	Gigthis	individual	YES		CIL 8.31
114	Africa Proconsularis	Gigthis	individual	YES		CIL 8.22698
115	Africa Proconsularis	Gigthis	individual			CIL 8.22693
116	Africa Proconsularis	Gigthis	collective		YES	CIL 8.11029
117	Africa Proconsularis	Gigthis	individual	YES		CIL 8.22694
118	Africa Proconsularis	Gigthis	individual			CIL 8.22710
119	Africa Proconsularis	Guelma	combo	YES		CIL 8.5366
120	Africa Proconsularis	Guelma	combo			CIL 8.5364
121	Africa Proconsularis	Guelma	collective			CIL 8.5366
122	Africa Proconsularis	Hadrumetum	*unknown*			CIL 8.22910
123	Africa Proconsularis	Hammam	collective	YES		CIL 8.587
124	Africa Proconsularis	Hammam Siala	*unknown*			CIL 8.14457
125	Africa Proconsularis	Haouli	individual			AE 1934.133
126	Africa Proconsularis	Henchir Bedd	collective			CIL 8.14372
127	Africa Proconsularis	Henchir Bedd	individual			CIL 8.14371
128	Africa Proconsularis	Henchir Ben Glaya	individual	YES		CIL 8.14377
129	Africa Proconsularis	Henchir Ben Glaya	*unknown*			CIL 8.14378
130	Africa Proconsularis	Henchir Brik	combo		YES	CIL 8.12317
131	Africa Proconsularis	Henchir Dedech	*unknown*			CIL 8.23105
132	Africa Proconsularis	Henchir el Haouaria	collective			AE 1997.1642

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
133	Africa Proconsularis	Henchir Saqy	emperor			CIL 8.10025
134	Africa Proconsularis	Henchir Sidi Ben Nour	individual			CIL 8.12413
135	Africa Proconsularis	Henchir Tut	individual			CIL 8.14346
136	Africa Proconsularis	Henchir Zian	individual	YES		CIL 8.11009
137	Africa Proconsularis	Hippo Regius	individual			CIL 8.17408
138	Africa Proconsularis	Iubaltianae	emperor			CIL 8.80
139	Africa Proconsularis	Karpis	individual			CIL 8.993
140	Africa Proconsularis	Kudiat Setieh	individual			CIL 8.17258
141	Africa Proconsularis	Lalla Dahlia	individual			CIL 8.27704
142	Africa Proconsularis	Lares	individual			CIL 8.1781
143	Africa Proconsularis	Lecpis Minor	emperor			AE 2002.1663
144	Africa Proconsularis	Lepcis Magna	individual	YES		CIL 8.22671c
145	Africa Proconsularis	Lepcis Magna	individual			AE 1991.1619
146	Africa Proconsularis	Lepcis Magna	combo		YES	IRT 534
147	Africa Proconsularis	Lepcis Magna	individual			IRT 601b
148	Africa Proconsularis	Lepcis Magna	individual	YES		IRT 605
149	Africa Proconsularis	Lepcis Magna	individual			AE 1925.105
150	Africa Proconsularis	Lepcis Magna	emperor			BCTH 1912.183
151	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1914.25
152	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1949.159
153	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1948.7
154	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1948.17
155	Africa Proconsularis	Lepcis Magna	individual			IRT 341
156	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1949.161
157	Africa Proconsularis	Lepcis Magna	collective		YES	IRT 353
158	Africa Proconsularis	Lepcis Magna	individual	YES		AE 1952.105
159	Africa Proconsularis	Limisa	collective		YES	AE 2004.1681
160	Africa Proconsularis	Limisa	individual		YES	AE 1992.1781
161	Africa Proconsularis	Limisa	individual			AE 2004.1674
162	Africa Proconsularis	Macomades	individual			CIL 8.11677
163	Africa Proconsularis	Macomades	*unknown*			CIL 8.11678
164	Africa Proconsularis	Madauros	individual			ILAlg 1.2055
165	Africa Proconsularis	Madauros	individual			ILAlg 1.2121
166	Africa Proconsularis	Madauros	individual			AE 1908.243

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
167	Africa Proconsularis	Madauros	individual			AE 1907.237
168	Africa Proconsularis	Madauros	individual			ILAlg 1.2082
169	Africa Proconsularis	Madauros	individual	YES		ILAlg 1.2131
170	Africa Proconsularis	Madauros	individual	YES		ILAlg 1.2132
171	Africa Proconsularis	Madauros	individual			BCTH 1925.287
172	Africa Proconsularis	Madauros	individual			CIL 8.4679
173	Africa Proconsularis	Madauros	individual	YES		AE 1919.44
174	Africa Proconsularis	Madauros	individual	YES		ILAlg 1.2052a
175	Africa Proconsularis	Madauros	individual	YES		ILAlg 1.2088
176	Africa Proconsularis	Madauros	individual			AE 1917/18.15
177	Africa Proconsularis	Madauros	individual	YES		ILAlg 1.2155
178	Africa Proconsularis	Magifa	individual	YES		CIL 8.16749
179	Africa Proconsularis	Masakin	individual	YES		AE 1938.43
180	Africa Proconsularis	Masclianae	individual	YES		AE 2007.1712
181	Africa Proconsularis	Masclianae	emperor			AE 2007.1713
182	Africa Proconsularis	Maxula	individual	YES		AE 1937.72
183	Africa Proconsularis	Membressa	*unknown*			CIL 8.129
184	Africa Proconsularis	Membressa	individual			CIL 8.1297
185	Africa Proconsularis	Mheimes	individual	YES		CIL 8.12314
186	Africa Proconsularis	Mididi	individual		YES	CIL 8.608
187	Africa Proconsularis	Mididi	collective			CIL 8.11774
188	Africa Proconsularis	Monastir	emperor			AfrRom 14.3.1704
189	Africa Proconsularis	Morabba	emperor			CIL 8.23968
190	Africa Proconsularis	Moregan	individual			CIL 8.23242
191	Africa Proconsularis	Municipium Avula	collective	YES		AE 1974.690
192	Africa Proconsularis	Municipium Avula	combo		YES	CIL 8.714
193	Africa Proconsularis	Municipium Seressitanum	combo		YES	CIL 8.937
194	Africa Proconsularis	Municipium Turcetanum	individual			CIL 8.12353
195	Africa Proconsularis	Musti	individual			AE 1968.593
196	Africa Proconsularis	Musti	individual			AE 1968.586
197	Africa Proconsularis	Musti	*unknown*	YES		CIL 8.15578

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
198	Africa Proconsularis	Musti	individual			CIL 8.15581
199	Africa Proconsularis	Musti	individual			AE 1968.595
200	Africa Proconsularis	Musti	individual			CIL 8.1574
201	Africa Proconsularis	Musti	individual	YES		AE 1968.599
202	Africa Proconsularis	Musti	individual	YES		AE 1968.596
203	Africa Proconsularis	Musti	individual			AE 1992.1815
204	Africa Proconsularis	Musti	individual			CIL 8.1577
205	Africa Proconsularis	Muzuca	individual			CIL 8.12058
206	Africa Proconsularis	Muzuca	individual	YES		CIL 8.12094
207	Africa Proconsularis	Muzuca	individual			CIL 8.12067
208	Africa Proconsularis	Naraggara	individual	YES		CIL 8.4636
209	Africa Proconsularis	Numulis	individual			CIL 8.26121
210	Africa Proconsularis	Numulis	individual	YES		CIL 8.15390b
211	Africa Proconsularis	Numulis	individual			CIL 8.15380
212	Africa Proconsularis	Oea	individual	YES		CIL 8.24
213	Africa Proconsularis	Oued Damoud	collective		YES	AE 1993.1715
214	Africa Proconsularis	Pagus Mercurialis	collective	YES		CIL 8.885
215	Africa Proconsularis	Pheradi Maius	individual	YES		AE 1927.26
216	Africa Proconsularis	Pupput	individual			AE 1997.1599
217	Africa Proconsularis	Pupput	individual			CIL 8.24095
218	Africa Proconsularis	Qasr al Qusaybah	individual	YES		CIL 8.709
219	Africa Proconsularis	Quballat	individual	YES		CIL 8.23942
220	Africa Proconsularis	Rmada	collective	YES		AE 1904.75
221	Africa Proconsularis	Sabratha	individual			AE 1925.103
222	Africa Proconsularis	Sabratha	individual			AE 1925.102
223	Africa Proconsularis	Saia Maior	individual			CIL 8.25500
224	Africa Proconsularis	Schauwasch	individual			CIL 8.1309
225	Africa Proconsularis	Schauwasch	*unknown*			CIL 8.1310
226	Africa Proconsularis	Schauwasch	collective			CIL 8.1311
227	Africa Proconsularis	Schauwasch	*unknown*			CIL 8.1314
228	Africa Proconsularis	Segermes	collective			AE 1992.1794
229	Africa Proconsularis	Segermes	collective	YES		CIL 8.906

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
230	Africa Proconsularis	Segjeg	individual			CIL 8.23746
231	Africa Proconsularis	Sicca Veneria	*unknown*			CIL 8.1637
232	Africa Proconsularis	Sicca Veneria	*unknown*			CIL 8.14382
233	Africa Proconsularis	Sicilibba	*unknown*	YES		CIL 8.14754
234	Africa Proconsularis	Sidi Ahmad al Hashani	individual			CIL 8.27818
235	Africa Proconsularis	Sidi Ahmad al Hashani	collective		YES	CIL 8.27817
236	Africa Proconsularis	Sidi Bou Garnoug	emperor			CIL 8.22123
237	Africa Proconsularis	Sidi Bou Garnoug	emperor			CIL 8.10083
238	Africa Proconsularis	Sidi Khalifa	collective	YES		CIL 8.16411
239	Africa Proconsularis	Sidi Mohammed El Azreg	individual	YES		CIL 8.25805
240	Africa Proconsularis	Sidi Naui	individual			CIL 8.754
241	Africa Proconsularis	Silyanah	individual	YES		AE 1946.47
242	Africa Proconsularis	Simitthus	*unknown*			CIL 8.25651
243	Africa Proconsularis	Simitthus	individual			CIL 8.14553
244	Africa Proconsularis	Simitthus	emperor	YES		CIL 8.10117
245	Africa Proconsularis	Sivalis	individual		YES	AE 1996.1706
246	Africa Proconsularis	Skira	individual			CIL 8.25895
247	Africa Proconsularis	Soliman	individual			CIL 8.939
248	Africa Proconsularis	Soltane	individual			ILAfr 304
249	Africa Proconsularis	Sucubi	individual	YES		AE 1962.182
250	Africa Proconsularis	Sufes	emperor			AE 2003.1972
251	Africa Proconsularis	Sufetula	*unknown*			ILAfr 140
252	Africa Proconsularis	Sufetula	individual	YES		AE 1954.59
253	Africa Proconsularis	Sufetula	collective			AE 1989.792
254	Africa Proconsularis	Suk Tleta	individual	YES		CIL 8.14465
255	Africa Proconsularis	Sustri	collective			CIL 8.25935
256	Africa Proconsularis	Sustri	collective		YES	AE 1912.147
257	Africa Proconsularis	Suturnica	individual	YES		AE 1992.1798
258	Africa Proconsularis	Suturnica	individual	YES		ILAfr 300
259	Africa Proconsularis	Talah	*unknown*			CIL 8.23293

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
260	Africa Proconsularis	Talah	individual	YES		AE 1905.35
261	Africa Proconsularis	Talah	individual	YES		CIL 8.23286
262	Africa Proconsularis	Talah	individual	YES		CIL 8.23280
263	Africa Proconsularis	Talah	individual	YES		CIL 8.501
264	Africa Proconsularis	Tella	collective	YES		CIL 8.17327
265	Africa Proconsularis	Tenelium	individual			ILAlg 1.158
266	Africa Proconsularis	Tepeltensis	combo	YES		CIL 8.12253
267	Africa Proconsularis	Thabraca	individual			CIL 8.17329
268	Africa Proconsularis	Thabraca	individual	YES		CIL 8.17329
269	Africa Proconsularis	Thaca	collective		YES	CIL 8.1194
270	Africa Proconsularis	Thaca	collective		YES	CIL 8.11194
271	Africa Proconsularis	Thagura	individual			CIL 8.4645
272	Africa Proconsularis	Thagura	individual	YES		AE 1935.40
273	Africa Proconsularis	Thenadassa	individual			AE 1950.127
274	Africa Proconsularis	Thibaris	individual	YES		CIL 8.26183
275	Africa Proconsularis	Thibursicum Bure	individual	YES		CIL 8.1442
276	Africa Proconsularis	Thibursicum Bure	individual			CIL 8.1463
277	Africa Proconsularis	Thibursicum Bure	individual	YES		CIL 8.1448
278	Africa Proconsularis	Thibursicum Bure	individual			CIL 8.15260
279	Africa Proconsularis	Thibursicum Bure	individual	YES		CIL 8.1441
280	Africa Proconsularis	Thibursicum Bure	individual			CIL 8.1447
281	Africa Proconsularis	Thibursicum Bure	combo			CIL 8.25998
282	Africa Proconsularis	Thicilila	collective			AE 2001.2077
283	Africa Proconsularis	Thignica	individual			AE 2006.1762
284	Africa Proconsularis	Thignica	collective		YES	CIL 8.1406
285	Africa Proconsularis	Thignica	collective		YES	CIL 8.15204
286	Africa Proconsularis	Thignica	individual			CIL 8.15206
287	Africa Proconsularis	Thignica	collective	YES		AE 1992.1817

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
288	Africa Proconsularis	Thinissut	individual	YES		AE 1908.161
289	Africa Proconsularis	Thisiduo	individual	YES		CIL 8.1267
290	Africa Proconsularis	Thisiduo	*unknown*			CIL 8.1268
291	Africa Proconsularis	Thuburbo Maius	individual			AE 1917/18.98
292	Africa Proconsularis	Thuburbo Maius	individual			AE 1923.22
293	Africa Proconsularis	Thuburbo Maius	emperor			AE 1958.123
294	Africa Proconsularis	Thuburbo Maius	individual			AE 1916.20b
295	Africa Proconsularis	Thuburbo Maius	individual			AE 1917/18.22
296	Africa Proconsularis	Thuburbo Maius	individual	YES		CIL 8.842
297	Africa Proconsularis	Thuburbo Maius	collective			CIL 8.12366
298	Africa Proconsularis	Thuburbo Maius	individual	YES		AE 1961.71
299	Africa Proconsularis	Thuburbo Maius	collective			CIL 8.12366
300	Africa Proconsularis	Thuburbo Maius	individual			CIL 8.1219
301	Africa Proconsularis	Thuburnica	individual	YES		AE 1988.1116
302	Africa Proconsularis	Thuburnica	individual	YES		CIL 8.25703
303	Africa Proconsularis	Thuburnica	individual			CIL 8.14690
304	Africa Proconsularis	Thuburnica	individual	YES		CIL 8.14703
305	Africa Proconsularis	Thuburnica	*unknown*			CIL 8.10607
306	Africa Proconsularis	Thubursicu Numidarum	individual			AE 1914.242
307	Africa Proconsularis	Thubursicu Numidarum	individual			AE 1914.243
308	Africa Proconsularis	Thubursicu Numidarum	individual			AE 1916.98
309	Africa Proconsularis	Thubursicu Numidarum	individual			ILAlg 1.1275

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
310	Africa Proconsularis	Thubursicu Numidarum	individual			ILAlg 1.1256
311	Africa Proconsularis	Thugga	individual			CIL 8.1503
312	Africa Proconsularis	Thugga	individual	YES		CIL 8.1505
313	Africa Proconsularis	Thugga	individual			CIL 8.26485
314	Africa Proconsularis	Thugga	collective			CIL 8.26547
315	Africa Proconsularis	Thugga	individual			CIL 8.26471
316	Africa Proconsularis	Thugga	individual			CIL 8.26478
317	Africa Proconsularis	Thugga	individual			CIL 8.26518
318	Africa Proconsularis	Thugga	individual	YES		CIL 8.26594
319	Africa Proconsularis	Thugga	individual	YES		CIL 8.1493
320	Africa Proconsularis	Thugga	individual			AE 1904.118
321	Africa Proconsularis	Thugga	individual			CIL 8.26530
322	Africa Proconsularis	Thugga	individual			CIL 8.1490
323	Africa Proconsularis	Thugga	individual	YES		CIL 8.1500
324	Africa Proconsularis	Thugga	individual			CIL 8.26474
325	Africa Proconsularis	Thugga	individual	YES		CIL 8.27356
326	Africa Proconsularis	Thugga	collective	YES		AE 1914.169
327	Africa Proconsularis	Thugga	individual	YES		CIL 8.1478
328	Africa Proconsularis	Thugga	individual	YES		AE 1969/70.650
329	Africa Proconsularis	Thugga	individual	YES		AE 1914.172
330	Africa Proconsularis	Thugga	individual	YES		CIL 8.26606
331	Africa Proconsularis	Thugga	individual			AE 1914.167
332	Africa Proconsularis	Thugga	individual	YES		CIL 8.1498
333	Africa Proconsularis	Thugga	individual			AE 1904.121
334	Africa Proconsularis	Thugga	*unknown*			CIL 8.604
335	Africa Proconsularis	Thugga	individual			CIL 8.26464
336	Africa Proconsularis	Thugga	individual	YES		CIL 8.26468
337	Africa Proconsularis	Thugga	individual	YES		CIL 8.26470
338	Africa Proconsularis	Thugga	individual			CIL 8.26472
339	Africa Proconsularis	Thugga	combo			CIL 8.1482
340	Africa Proconsularis	Thugga	individual			CIL 8.26500
341	Africa Proconsularis	Tichilla	emperor			BCTH 1908.162
342	Africa Proconsularis	Tichilla	individual			CIL 8.25864
343	Africa Proconsularis	Tichilla	individual			CIL 8.25867

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
344	Africa Proconsularis	Tillibari	individual			AE 1975.870
345	Africa Proconsularis	Tituli	collective			CIL 8.27828
346	Africa Proconsularis	Tubernuc	emperor			CIL 8.948
347	Africa Proconsularis	Tuccabor	individual	YES		CIL 8.1321
348	Africa Proconsularis	Tuccabor	individual	YES		CIL 8.1320
349	Africa Proconsularis	Tuccabor	individual			CIL 8.1318
350	Africa Proconsularis	Tuccabor	individual			CIL 8.25825
351	Africa Proconsularis	Tunes	emperor			CIL 8.10041
352	Africa Proconsularis	Tunes	individual	YES		AE 1910.154
353	Africa Proconsularis	Uccula	individual	YES		CIL 8.14361
354	Africa Proconsularis	Uchi Maius	individual			CIL 8.26280
355	Africa Proconsularis	Uchi Maius	individual	YES		CIL 8.26239
356	Africa Proconsularis	Uchi Maius	collective		YES	CIL 8.15449
357	Africa Proconsularis	Uchi Maius	individual		YES	CIL 8.26241
358	Africa Proconsularis	Uchi Maius	collective			CIL 8.26249
359	Africa Proconsularis	Uchi Maius	combo		YES	CIL 8.26262
360	Africa Proconsularis	Uchi Maius	individual			CIL 8.26264
361	Africa Proconsularis	Uchi Minos	collective			AE 2002.1681
362	Africa Proconsularis	Udeka	individual	YES		CIL 8.15497
363	Africa Proconsularis	Ureu	combo		YES	AE 1975.880
364	Africa Proconsularis	Urusi	collective		YES	CIL 8.12014
365	Africa Proconsularis	Uthina	emperor			BCTH 1907.221
366	Africa Proconsularis	Utica	individual	YES		AE 1961.201
367	Africa Proconsularis	Utica	collective		YES	CIL 8.1183
368	Africa Proconsularis	Vaga	individual			CIL 8.10569
369	Africa Proconsularis	Vaga	individual			CIL 8.14392
370	Africa Proconsularis	Vaga	collective			CIL 8.1217
371	Africa Proconsularis	Vaga	individual	YES	YES	CIL 8.1224
372	Africa Proconsularis	Vallis	collective		YES	AE 1983.951
373	Africa Proconsularis	Vallis	*unknown*			CIL 8.1285
374	Africa Proconsularis	Vazari	individual			CIL 8.14349
375	Africa Proconsularis	Vazari	individual			AE 2003.1999
376	Africa Proconsularis	Vazi Sarra	individual			CIL 8.12006
377	Africa Proconsularis	Vazi Sarra	individual			CIL 8.12000
378	Africa Proconsularis	Vazi Sarra	individual	YES		CIL 8.23749
379	Africa Proconsularis	Vazi Sarra	collective	YES		CIL 8.12001

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#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
380	Africa Proconsularis	Wadi ar Rashiq	*unknown*			CIL 8.21928
381	Africa Proconsularis	Wadi az Zannad	emperor			AE 1912.23
382	Africa Proconsularis	Zama Regia	individual	YES	YES	CIL 8.16441
383	Africa Proconsularis	Zaouia Mornag	individual	YES		CIL 8.998
384	Africa Proconsularis	Zaouia Mornag	individual			AE 1909.9
385	Africa Proconsularis	Zarouria	individual			CIL 8.16857
386	Africa Proconsularis	Zaytunat bin Hassan	*unknown*			AE 1936.29
387	Africa Proconsularis	Zezia	emperor			CIL 8.22020
388	Africa Proconsularis	Ziqua	individual	YES		CIL 8.895
389	Mauretania Caesariensis	Albulae	collective			CIL 8.9796
390	Mauretania Caesariensis	Albulae	emperor			CIL 8.22629
391	Mauretania Caesariensis	Albulae	individual			CIL 8.21665
392	Mauretania Caesariensis	Altava	collective	YES		AE 1985.976
393	Mauretania Caesariensis	Auzia	emperor			CIL 8.20816
394	Mauretania Caesariensis	Auzia	emperor			CIL 8.9041
395	Mauretania Caesariensis	Auzia	individual			CIL 8.9023
396	Mauretania Caesariensis	Auzia	individual	YES		CIL 8.9177
397	Mauretania Caesariensis	Auzia	individual			CIL 8.9021
398	Mauretania Caesariensis	Auzia	individual	YES		CIL 8.9064
399	Mauretania Caesariensis	Auzia	individual	YES		CIL 8.9015
400	Mauretania Caesariensis	Auzia	individual	YES		CIL 8.9016
401	Mauretania Caesariensis	Auzia	individual			CIL 8.9026
402	Mauretania Caesariensis	Auzia	collective			CIL 8.9062
403	Mauretania Caesariensis	Auzia	individual	YES		CIL 8.9067
404	Mauretania Caesariensis	Bou Tlelis	individual			CIL 8.21662
405	Mauretania Caesariensis	Caesarea	individual			CIL 8.93020
406	Mauretania Caesariensis	Caesarea	individual	YES		AE 1902.12
407	Mauretania Caesariensis	Caesarea	*unknown*			CIL 8.20990
408	Mauretania Caesariensis	Castellum Dianense	emperor			CIL 8.8701

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
409	Mauretania Caesariensis	Choba	collective		YES	CIL 8.8375
410	Mauretania Caesariensis	Iomnium	individual			CIL 8.20711
411	Mauretania Caesariensis	Kherbet	collective			AE 1917/18.68
412	Mauretania Caesariensis	Lemellef	individual			CIL 8.8809
413	Mauretania Caesariensis	Mopthi	individual			CIL 8.20428
414	Mauretania Caesariensis	Novaricia	individual			CIL 8.10907
415	Mauretania Caesariensis	Perdices	emperor			AE 1966.593
416	Mauretania Caesariensis	Quiza	emperor		YES	CIL 8.9697
417	Mauretania Caesariensis	Rapidum	collective	YES		CIL 8.20834
418	Mauretania Caesariensis	Rusazus	individual			CIL 8.8991
419	Mauretania Caesariensis	Rusguniae	*unknown*			AE 1965.229
420	Mauretania Caesariensis	Rusuccuru	individual	YES		CIL 8.8995
421	Mauretania Caesariensis	Saldae	individual			CIL 8.8935
422	Mauretania Caesariensis	Satafis	individual			CIL 8.20251
423	Mauretania Caesariensis	Satafis	individual			CIL 8.8393
424	Mauretania Caesariensis	Satafis	individual			CIL 8.20249
425	Mauretania Caesariensis	Sertei	individual	YES		CIL 8.8826
426	Mauretania Caesariensis	Sertei	emperor			CIL 8.8828
427	Mauretania Caesariensis	Sitifis	individual			CIL 8.8457
428	Mauretania Caesariensis	Sitifis	*unknown*			CIL 8.8507
429	Mauretania Caesariensis	Sitifis	individual			AE 1993.1777
430	Mauretania Caesariensis	Sitifis	individual			AE 1930.46
431	Mauretania Caesariensis	Sitifis	*unknown*	YES		CIL 8.20254
432	Mauretania Caesariensis	Takitount	individual			CIL 8.8409
433	Mauretania Caesariensis	Tipasa	collective	YES		AE 1935.60
434	Mauretania Tingitana	Banasa	individual			AE 1957.63
435	Mauretania Tingitana	Volubilis	individual			AE 1966.606
436	Mauretania Tingitana	Volubilis	collective			CIL 8.9993
437	Mauretania Tingitana	Volubilis	collective	YES		CIL 8.21825
438	Numidia	Abeid	emperor			CIL 8.10393
439	Numidia	Ain Charchar	individual			AE 1942/43.93
440	Numidia	Ain el Hadjar	emperor			AE 1966.594
441	Numidia	Ain Kerma	individual			ILAlg 2.3.10311
442	Numidia	Ain Touta	individual	YES		AE 1901.115
443	Numidia	Aquae Flavianae	individual	YES		AE 1928.36

(cont.)

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
444	Numidia	Aquae Flavianae	individual	YES		AE 1957.92
445	Numidia	Besseriani	individual			CIL 8.2480
446	Numidia	Bordj Mamra	collective			CIL 8.10335
447	Numidia	Calceus Herculis	individual			AE 1933.47
448	Numidia	Casbah	collective	YES		CIL 8.10296
449	Numidia	Castellum Arsacali-tanum	individual			CIL 8.6047
450	Numidia	Castellum Elefantum	individual			CIL 8.6355
451	Numidia	Castellum Tidditanorum	individual			ILAlg 2.1.3574
452	Numidia	Castellum Tidditanorum	individual	YES		AE 1942/43.12
453	Numidia	Cirta	individual			CIL 8.7094
454	Numidia	Cirta	individual	YES		CIL 8.7095
455	Numidia	Cirta	individual			CIL 8.7000
456	Numidia	Cirta	individual	YES		CIL 8.7123
457	Numidia	Cirta	individual	YES		CIL 8.7063
458	Numidia	Cirta	emperor			CIL 8.10304
459	Numidia	Cirta	emperor			CIL 8.22371
460	Numidia	Cirta	individual			AE 1897.62
461	Numidia	Cirta	individual	YES		CIL 8.6962
462	Numidia	Cirta	individual	YES		CIL 8.7105
463	Numidia	Cirta	collective			CIL 8.7013
464	Numidia	Cirta	individual			CIL 8.7019
465	Numidia	Cirta	individual			CIL 8.7031
466	Numidia	Cloaret	emperor			CIL 8.10318
467	Numidia	Cuicul	individual	YES		CIL 8.8318
468	Numidia	Cuicul	individual			CIL 8.20156
469	Numidia	Cuicul	collective			ILAlg 2.3.7806
470	Numidia	Cuicul	collective			AE 1911.101
471	Numidia	Cuicul	collective			AE 1912.155

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
472	Numidia	Cuicul	collective			CIL 8.22399
473	Numidia	Cuicul	collective			AE 1911.104
474	Numidia	Cuicul	individual			AE 1920.15
475	Numidia	Cuicul	individual			CIL 8.8324
476	Numidia	Cuicul	combo			CIL 8.8309
477	Numidia	Cuicul	individual			CIL 8.20145
478	Numidia	Cuicul	individual	YES		CIL 8.20151
479	Numidia	Cuicul	individual			ILAlg 2.3.7671
480	Numidia	Cuicul	individual	YES		AE 1920.114
481	Numidia	Cuicul	collective			AE 1920.16
482	Numidia	Cuicul	individual			CIL 8.8313
483	Numidia	Cuicul	collective			CIL 8.8321
484	Numidia	Cuicul	individual	YES		CIL 8.20144
485	Numidia	Cuicul	individual			AE 1916.16
486	Numidia	Cuicul	individual			AE 1916.36
487	Numidia	Cuicul	individual	YES		AE 1919.159
488	Numidia	Cuicul	individual	YES		CIL 8.8311
489	Numidia	Diana Veteranorum	individual			CIL 8.4585
490	Numidia	Diana Veteranorum	individual			CIL 8.4597
491	Numidia	Diana Veteranorum	individual			CIL 8.4579
492	Numidia	El Arrouch	emperor			CIL 8.10314
493	Numidia	El Arrouch	emperor			CIL 8.10315
494	Numidia	El Bir	emperor			CIL 8.10397
495	Numidia	El Gehara	individual			CIL 8.18024
496	Numidia	El Hamacha	individual	YES		CIL 8.26046
497	Numidia	El Kharba	individual			CIL 8.7946
498	Numidia	El Outhaia	emperor			CIL 8.2488
499	Numidia	Fedj Mzala	collective			CIL 8.22397
500	Numidia	Gens Suburburum Colonorum	individual	YES		AE 1913.225

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#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
501	Numidia	Gens Suburburum Colonorum	individual	YES		CIL 8.8245
502	Numidia	Ghelil	emperor			CIL 8.10404
503	Numidia	Hammam Berda	emperor			CIL 8.22210
504	Numidia	Hodna	emperor			CIL 8.10385
505	Numidia	Kef Tazerout	individual			CIL 8.8241
506	Numidia	Lamasba	emperor			CIL 8.10387
507	Numidia	Lamasba	emperor			CIL 8.22437
508	Numidia	Lambaesis	individual			CIL 8.2681
509	Numidia	Lambaesis	individual			CIL 8.2662
510	Numidia	Lambaesis	individual	YES		CIL 8.2630
511	Numidia	Lambaesis	individual	YES		CIL 8.2682
512	Numidia	Lambaesis	individual			CIL 8.18252
513	Numidia	Lambaesis	individual			AE 1955.137
514	Numidia	Lambaesis	*unknown*			CIL 8.2722
515	Numidia	Lambaesis	individual			CIL 8.2634
516	Numidia	Lambaesis	individual			AE 1901.118
517	Numidia	Lambaesis	emperor			CIL 8.2548
518	Numidia	Lambaesis	individual			CIL 8.2597
519	Numidia	Lambaesis	individual			CIL 8.2647
520	Numidia	Lambaesis	individual			CIL 8.2657
521	Numidia	Lambaesis	collective			CIL 8.2671
522	Numidia	Lambaesis	collective			CIL 8.2706
523	Numidia	Lambaesis	emperor			AE 1955.135
524	Numidia	Lambaesis	individual			AE 1939.36
525	Numidia	Lambaesis	emperor			AE 1971.508
526	Numidia	Lambaesis	combo			CIL 8.18227
527	Numidia	Lambaesis	collective			CIL 8.2670
528	Numidia	Lambaesis	individual	YES		CIL 8.2676
529	Numidia	Lambaesis	emperor			CIL 8.2579a–c
530	Numidia	Lambaesis	emperor			CIL 8.2653
531	Numidia	Lambaesis	emperor			CIL 8.2658
532	Numidia	Lambaesis	collective			CIL 8.2554

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
533	Numidia	Lambaesis	individual			CIL 8.18214
534	Numidia	Lambaesis	individual			CIL 8.2611
535	Numidia	Lambaesis	collective			CIL 8.2654
536	Numidia	Lambaesis	individual			CIL 8.2656
537	Numidia	Lambaesis	individual			CIL 8.2661
538	Numidia	Lambaesis	emperor			CIL 8.2698
539	Numidia	Lambaesis	individual			CIL 8.2760
540	Numidia	Lambaesis	individual			CIL 8.2680
541	Numidia	Lambaesis	combo			CIL 8.18227
542	Numidia	Lambaesis	emperor			CIL 8.18247
543	Numidia	Lambaesis	emperor			CIL 8.18328
544	Numidia	Macomades	individual	YES		CIL 8.4764
545	Numidia	Macomades	individual			CIL 8.4767
546	Numidia	Macomades	individual			CIL 8.4766
547	Numidia	Mascula	individual			AE 1911.217
548	Numidia	Mascula	individual			AE 1911.217
549	Numidia	Nattabutes	collective		YES	ILAlg 2.2.6094
550	Numidia	Nattabutes	individual			CIL 8.10827
551	Numidia	Nattabutes	individual	YES		ILAlg 22.6093
552	Numidia	Oued Hamla	individual			AE 1942/43.88
553	Numidia	Oued Hammam	emperor			CIL 8.10320
554	Numidia	Oued Kherouf	individual			AE 1913.226
555	Numidia	Oued Smendou	emperor			CIL 8.10308
556	Numidia	Oued Smendou	emperor			CIL 8.22372
557	Numidia	Oued Smendou	emperor			CIL 8.22373
558	Numidia	Rusciade	individual			CIL 8.7964
559	Numidia	Rusciade	individual	YES		CIL 8.7957
560	Numidia	Rusciade	emperor			CIL 8.10323
561	Numidia	Rusciade	individual	YES		CIL 8.7986
562	Numidia	Rusicade	individual	YES		CIL 8.7983
563	Numidia	Rusicade	collective			CIL 8.10322
564	Numidia	Si Hammar	emperor			CIL 8.10389

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#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
565	Numidia	Sigus	individual	YES		CIL 8.10859
566	Numidia	Theveste	individual			AE 1995.1771
567	Numidia	Theveste	individual			AE 1933.233
568	Numidia	Thibilis	individual	YES		ILAlg 2.2.4711
569	Numidia	Thibilis	individual	YES		ILAlg 2.2.4639
570	Numidia	Thibilis	individual			CIL 8.5524
571	Numidia	Thibilis	individual	YES		CIL 8.18913
572	Numidia	Timgad	collective			CIL 8.2370
573	Numidia	Timgad	individual			CIL 8.2388
574	Numidia	Timgad	individual			CIL 8.2398
575	Numidia	Timgad	individual			CIL 8.2399
576	Numidia	Timgad	individual		YES	CIL 8.17854
577	Numidia	Timgad	collective		YES	BCTH 1907.274
578	Numidia	Timgad	individual			AE 1957.82
579	Numidia	Timgad	individual	YES		AE 1902.144
580	Numidia	Timgad	individual			AE 1968.647
581	Numidia	Timgad	individual	YES		BCTH 1907.277
582	Numidia	Timgad	individual			ILS 5579
583	Numidia	Timgad	*unknown*			CIL 8.2348
584	Numidia	Timgad	individual			CIL 8.2372
585	Numidia	Timgad	individual	YES		CIL 8.17831
586	Numidia	Timgad	individual		YES	CIL 8.17867
587	Numidia	Tubunae	individual			AE 1987.1086
588	Numidia	Uzelis	individual	YES		CIL 8.6339
589	Numidia	Uzelis	individual	YES		AE 1917/18.44
590	Numidia	Verecunda	individual			CIL 8.4224
591	Numidia	Verecunda	individual	YES		CIL 8.4219
592	Numidia	Verecunda	collective		YES	CIL 8.4205
593	Numidia	Verecunda	collective			CIL 8.4221
594	Numidia	Verecunda	individual	YES		CIL 8.4253
595	Numidia	Zarai	individual			CIL 8.4517
596	Numidia	Zarai	emperor			CIL 8.10374
597	Numidia	Zarai	emperor			CIL 8.22473
598	Numidia	Zarai	emperor			CIL 8.22474

#	Province	Findspot	Sponsor	Personal funding	Public funding	Reference
599	Numidia	Zarai	emperor			CIL 8.22475
600	Numidia	Zarai	emperor			CIL 8.22477
601	Numidia	Zarai	emperor			CIL 8.22482
602	Numidia	Zarai	individual	YES		CIL 8.10765

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